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STROPHANTHUS (HISPIDUS), ITS PHARMACOLOGY AND THERAPEUTICS. *By* CHARLES W. PURDY, M.D. *Professor of Renal Disease at the Chicago Polyclinic.*

Strophanthus is a climbing plant belonging to the natural order of the *Apocynaceæ* and is indigenous to equatorial Africa. The seeds are the most active part of the plant, and when finely ground and made into a paste, are used by several African tribes as an arrow poison. Strophanthine, the active principle of the plant—a crystalline glucoside—is present in the leaves and bark, but to a much less extent than in the seeds.

Attention was first called to the pharmacological action of strophanthus by Pélikan, of St. Petersburg, in a communication to the Academy of Sciences, of Paris, in 1865. During the same year reference was made to it in a note to a paper on certain heart poisons by Fagge and Stevenson of London.

We are chiefly indebted, however, to Prof. Thomas R. Fraser of Edinburgh, for bringing this agent prominently before the profession. At the meeting of the British Medical Association held at Cardiff in June, 1885, Professor Fraser in a most

interesting paper*—the result of fifteen years' observations upon man and the lower animals—first clearly pointed out the physiological action of the drug. While ranking *strophanthus* with the *digitalis* group as one of the muscle poisons which act, not only upon the heart, but also upon all striped muscular fiber, he also pointed out certain essential differences between the action of *strophanthus* and that of other members of the group on the circulatory apparatus.

Chief among these differences, and one which is likely to prove of the greatest value therapeutically, is the fact that while *strophanthus* acts upon the cardiac muscle, even more powerfully as a stimulant than does *digitalis*, yet the former exerts little or no influence on the arterioles.

It has been conclusively proven by numerous experiments upon frogs, rabbits, etc., that *digitalis*, while it increases the power of the heart's contractions, also acts as a powerful vaso-constrictor on the arterioles. It is the latter action of *digitalis* which renders it valuable in the early stages of inflammations. It narrows the channels of the blood in its peripheral distribution, thereby reducing arterial congestion; it also in contracting the vessels (arterioles) restores their lost tone and diminishes the permeability of their coats, thus checking the migration of corpuscles, and the effusion of inflammatory products into the surrounding tissues. But while *digitalis* acts so happily in controlling many early inflammations, notably those situated in certain structures of a more or less spongy consistence, as the kidneys, lungs etc, yet this same powerful vaso-constrictor action on the vessels increases the labor of the heart by impeding the arterial circulation, and throwing back upon the heart a greater column of blood, the force of which must be met and overcome by the cardiac

*See British Med. Jour. Nov. 14th, 1885

muscle. Now it is readily conceivable how when the cardiac muscle has begun to yield to the weakening influence of organic change—the ultimately legitimate result of every cardiac hypertrophy if only it lasts sufficiently long—and more especially when the aortic valves become incompetent, that the use of digitalis not only hastens the course of the cardiac disease, but it also greatly increases the danger of sudden death. The greater column of blood regurgitating into the left ventricle, backed by a more rigid and unyielding arterial system, more quickly causes the muscular fibres of the ventricle to yield, and thus dilatation is hastened. In addition to this, the increased force of the blood-column resting within and against the ventricle, requires a much slighter re-enforcement (such as may result from a muscular effort) to give it an impetus, the force of which is greater than the ventricle is able to overcome, in which case death becomes the almost instantaneous result.

Valuable as digitalis undoubtedly is in many cardiac affections—especially if the ventricles be strong, and the valves guarding the exit from the heart, the aortics, be intact; yet many careful observers have learned from experience its dangers in the opposite conditions, and have been casting about for some agent which will add strength to the cardiac muscle without lending an additional burden to be borne by the weakened heart. Happily in *strophanthus* such an agent now seems to be supplied.

In further distinguishing between the physiological action of digitalis and that of *strophanthus*, Professor Fraser has stated that the latter acts upon the heart the more rapidly as well as the more powerfully of the two. From considerable clinical experience in the use of *strophanthus* I must add my testimony to that of Professor Fraser's upon this

point. From a series of experiments conducted with full doses of tincture of *strophanthus*—10 minims—I have found pretty uniformly that the sphygmograph indicated a considerable increase of cardiac power in one hour after the administration of the drug; that it reached its maximum in from one and a half to four hours; that the increased power was well maintained from a single dose for eight hours; and that it did not lose its entire effect for twenty-four hours, and often for a longer time. The temperature under the tongue, according to my own observations, begins to fall in about one hour and a half after a 10-minim dose of the *strophanthus* tincture, and in two hours it usually marks a half to three-fourths of a degree Fahrenheit reduction, maintaining pretty uniformly the above fall for from six to ten or twelve hours, and in some cases longer. I have observed no gastric or intestinal irritation from the use of *strophanthus*, although I have given it in moderately full doses—5 to 7 minims of the tincture—for several weeks continuously. Given as above, it has slowed the pulse down as low as 60 beats in the minute. In one case, after its continuous use for a month in pretty full doses, the heart suddenly took on a very rapid action, reaching 150 pulsations per minute. This abnormal rapidity of the heart's pulsations gradually subsided, reaching nearly the normal in about three and a half hours. There was no cardiac pain observed, which is so frequent an accompaniment of the over-action of digitalis.

For comparative purposes, Professor Fraser has conducted experiments upon the frog's heart, by supplying it with solutions both of digitaline and *strophanthine* by means of Williams' apparatus. He found that a solution of digitaline,

1 part in 4,000, was not sufficient to kill the heart; while on the other hand, the enormous dilution of strophanthine of 1 part in 10,000,000 was strong enough to kill (arrest) the heart. A solution of one part strophanthine in 6,000,000 produced complete stoppage of the heart's contractions in extreme systole in twenty minutes.

With regard to the action of strophanthus on the vessels (arterioles) Professor Fraser employed solutions of digitaline and strophanthine upon the frog after destruction of the central nervous system. In the case of digitaline, 1 part in 20,000, produced in six or seven minutes such extreme contraction of the vessels as to arrest the circulation through them.

Substituting strophanthine for digitaline, 1 part in 20,000, had no effect upon the vessels, and when the strength was increased to 1 part in 2,000 but a temporary effect was produced, which soon subsided.

A patient of mine, suffering from advanced mitral and aortic disease, was given a single dose of 10 minims of the tincture of strophanthus, the patient remaining quietly in bed for some time before, and during the whole time of observations no medicines nor stimulants were given save the strophanthus. Before the strophanthus was administered the pulse was 78 per minute, the respirations were 18 per minute, and the temperature under the tongue was 98.5° F. The following tracings were taken (Figs. 1 and 2):

In Fig. 1 just sufficient pressure was applied— $\frac{1}{2}$ ounce—to give the greatest freedom of movement to the lever. It will be observed that when the pressure upon the artery was increased to 2 ounces, the tracing became almost

reduced to the respiratory or base line, so weak was the muscular power of the ventricle.

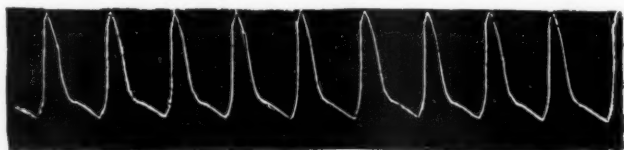


Fig. I.— $\frac{1}{2}$ ounce pressure.



Fig. II.—2 ounce pressure.

One hour after the 10 minims of strophanthus tincture was given the pulse was 75 per minute, the respirations were 16 per minute, and the temperature under the tongue was 98.5° F. The tracings 3, 4, and 5 were then taken.

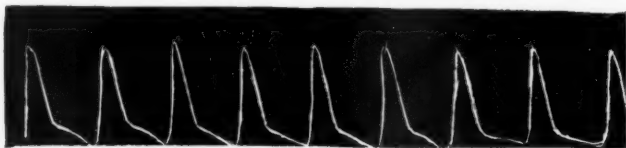


Fig. III.— $1\frac{1}{2}$ ounce pressure.

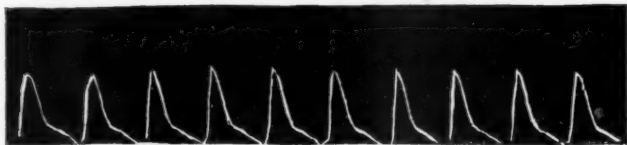


Fig. IV.—2 ounce pressure.

It will be observed (Fig. 4) that two ounces pressure upon the artery scarcely modified the tracing, that even $2\frac{1}{2}$

ounces pressure (Fig. 5) failed to materially lower the apex of the tracing, so markedly increased had become the power of the ventricular contraction.

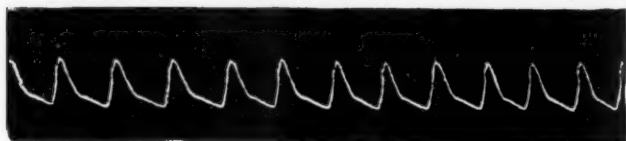


Fig. V.—2½ ounce pressure.

Two hours after the 10 minims of strophanthus tincture was given, the pulse was 72 per minute, the respirations were 18 per minute, and the temperature under the tongue was 97.8° F.; the temperature had therefore fallen .7° F. in two hours. The following tracings were then taken:



Fig. VI.—2 ounce pressure.

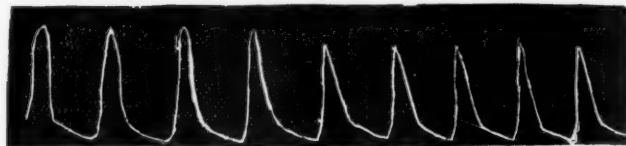


Fig. VII.—3 ounce pressure.

It will be observed (Fig. 6) that under 2 ounces pressure (which before the strophanthus was given nearly reduced the tracing to the respiratory line), the freedom of the lever was now scarcely modified, and that even 3 ounces pressure

upon the artery (Fig. 7) but little modified the height of the tracing.

Three hours after the 10-minim dose of strophanthus was administered, the pulse was 72 per minute, the respirations were 17 per minute, and the temperature under the tongue was 97.8° F. The following tracings were then taken (Figs. 8 and 9):

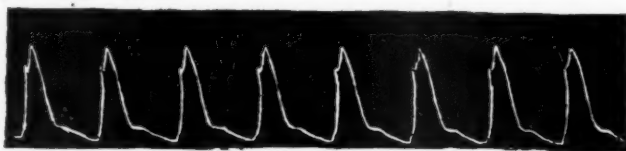


Fig. VIII.—2 ounce pressure.

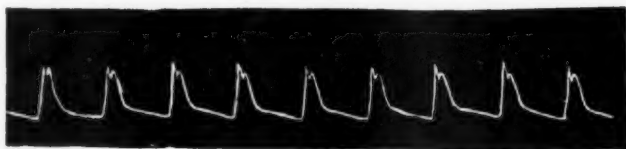


Fig. IX.—3½ ounce pressure.

Four hours after the strophanthus was given, the pulse was 69 per minute, the respirations were 18 per minute, and

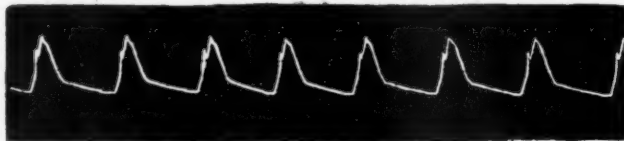


Fig. X.—1½ ounce pressure.

the temperature under the tongue was 97.8° F. The

accompanying tracings were then taken (Figs. 10 and 11).

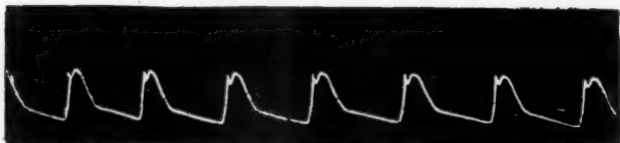


Fig. XI.— $2\frac{1}{2}$ ounce pressure.

Six hours after administration of the strophanthus, the pulse was 69 per minute, the respirations were 18 per minute, and the temperature under the tongue was 97.8° F. The following tracings (Figs. 12 and 13) were then taken:



Fig. XII.—2 ounce pressure.

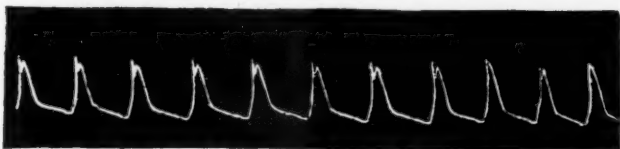


Fig. XIII.— $2\frac{1}{2}$ ounce pressure.

Eight hours after administration of the strophanthus, the pulse was 72 per minute, the respirations were 16 per

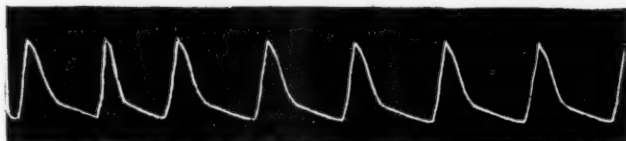


Fig. XIV.— $1\frac{1}{2}$ ounce pressure.

minute, and the temperature under the tongue was 97.6° F.

The accompanying tracings (Figs. 14 and 15) were then taken:



Fig. XV.— $2\frac{1}{2}$ ounce pressure.

It will be observed that at the end of eight hours after administration of a single dose of 10 minims of the tincture of strophanthus, the drug maintained a decided action upon the heart and temperature.

Although I have a large number of sphygmographic tracings of the pulse after the use of strophanthus, I have selected the foregoing case as probably the best one to illustrate the action of strophanthus upon the ventricular muscle for the following reasons: The case was one of grave aortic defect, and therefore the pressure upon the artery showed more plainly the increase of cardiac power induced by the drug than if the aortic valves were intact, for obvious reasons. It will be noted of the sphygmograms taken after the fourth hour from the administration of strophanthus that the tidal wave became very marked, showing a tendency to rigidity in the ventricular muscle in systole; the more gradual slope of the tracing following the aortic wave points to the same condition of the heart in diastole.

The action of strophanthus as a diuretic is scarcely less pronounced than as a cardiac stimulant; in fact the former depends upon the latter. I hope in a future communication to dwell more fully upon this part of the subject.

To sum up briefly then, strophanthus seems to act upon

the heart more powerfully and more rapidly than does digitalis. "In lethal doses it paralyzes the heart in rigid systole." It acts but slightly upon the vessels, and only in large doses. It lowers the normal temperature from .5° F. to .1° F. It causes a direct and marked rise in the arterial blood pressure, and thus acts as a diuretic.

With the foregoing data to guide us, the very practical question next presents itself, What are the therapeutic indications for the use of strophanthus?

There can be no question but that we have much yet to learn upon this point, and for what we already know we are largely indebted to Professor Fraser, as we undoubtedly are for our knowledge of the pharmacology of the drug.

Nearly a year ago I strongly advised* the use of strophanthus in the late stages of heart affections which so commonly accompany chronic Bright's disease (pp. 187), also in cardiac collapse common to scarlatinal nephritis (pp. 223), and lastly in so-called cyanotic induration of the kidney (pp. 279).

In the last named condition especially, where the venous system is over-distended at the expense of the arterial, I have found it the most useful of all agents. Of heart disease in general it may be said of strophanthus that if not always indicated, it is yet rarely if ever contra-indicated. In all weakened conditions of the heart then, if the cardiac muscle has not undergone organic change, strophanthus promises much. If the cardiac muscle has undergone fatty change, of course no agent is capable of restoring its power; but as the exact state of the cardiac muscle with regard to organic change can never be accurately, determined, save at the autopsy, we may

* Bright's Disease and Allied Affections of the Kidney. Philadelphia: Lea Bros. & Co. London: H. K. Lewis.

yet give strophanthus when the condition is suspected, and not without hope. It at least in all probability has the virtue of working no mischief.

Sir Andrew Clark has reported in a recent article in the *British Medical Journal* over 600 cases of valvular diseases of the heart, selected from his private practice, none of which lasted less than five and many of them over twenty-five years. It is significant that in a large number of the cases the patients went about their daily duties without regular treatment so far as drugs are concerned. This strongly suggests to me the necessity of at least using agents in cardiac affections which are not likely to work harm.

Mitral disease of the heart—either stenosis or insufficiency—is likely to furnish a most promising field for the therapeutic use of strophanthus. Given early it is likely to retard hypertrophy more efficiently than digitalis. Under the use of strophanthus the cardiac muscle is much less prone to pass into fatty change than under the use of digitalis, because in the former case the vessels remaining uncontracted permit a better supply of blood to, and consequently a better nourishment of, the cardiac muscle.

In threatened collapse of the heart's action from most causes strophanthus is strongly indicated; and in such cases it should be given sub-cutaneously in the form of strophanthine.

Strophanthus is perhaps the most promising agent we possess for the relief of cardiac dropsy with its usually attendant dyspnœa, both of which it often relieves with promptness and efficiency.

Strophanthus should not be used in acute inflammation, possibly excepting that of the lungs. Especially should its use be avoided in the treatment of acute nephritis accompanied by bloody urine.

Dr. Smith of Dublin,* while he considers *strophanthus* a valuable drug for controlling the heart's action, yet he does not consider it suitable for the use of every patient. I have noted in some cases that it seems to irritate the heart, though usually not unless full doses are administered.

For the benefit of those who are unfamiliar with *strophanthus* I shall in conclusion briefly consider the pharmacy of the drug. This indeed seems the more necessary since heretofore different strengths of the tincture have been put upon the market.

Professor Fraser originally advised the use of a tincture of the same strength as that of *digitalis*, i. e. 1 in 8. He now, however, advises for general use a tincture of the strength of 1 to 20. In my recent work on renal diseases I uniformly advised a dose of from 2 to 6 drops, basing my calculations upon Professor Fraser's original formula. According to his new formula the above dose should be increased two and a half times—5 to 15 drops. Professor Fraser now gives the following directions for preparing *strophanthus* tincture.†

"*Strophanthus* seeds, deprived of their comose appendices, reduced to powder and dried, 1 ounce or 1 part. Ether, freed from spirit and from water, 10 fluid ounces, or fluid parts. Rectified spirit, a sufficiency to obtain 1 pint, or 20 fluid parts.

"Remove entirely the stalks and comose appendices from the seeds, reduce the seeds to a moderately fine powder, dry the powder by exposing for twelve hours to a temperature of 100° or 120° F., and weigh. Pack in a percolator (the percolator being furnished with air valves, or being otherwise so constructed that the percolation may be arrested

* Year Book of Treatment for 1886, pp. 293.

† See British Medical Journal, Jan. 2d, 1887.

when desired), add ether until the whole of the powder is saturated, and a small quantity of the ether has dropped into the percolator; arrest the percolation for 24 hours, and then continue percolating slowly until the whole of the ether has been used. If the last ether percolate should not be almost colorless, use more ether."

"Remove the powder from the percolator; expose to the air, and break up any lumps after the ether has sufficiently evaporated; and continue the exposure, heating the powder, if necessary, to 100° or 120° F., until all the ether has evaporated, when a uniform, nearly white, dry powder may easily be obtained."

"Repack the powder in the percolator, add enough rectified spirit to moisten it thoroughly; arrest the further flow of the spirit, and macerate for 48 hours; and pass rectified spirit slowly through until twenty fluid pints of tincture are obtained.

"In this process, the preliminary extraction with ether is for the purpose of removing the large quantity of inert oil contained in the seeds, which, if present in the tincture, would cause it to become opalescent on the addition of water."

The above tincture is nearly colorless, having a very pale yellow tinge (not green), neutral in reaction and intensely and rather persistently bitter to the taste. It mixes unchanged with water, is not precipitated by tannin, but becomes opalescent upon the addition of ether. Solution of ferric perchloride intensifies its yellow color, and produces a slight haziness in the solution, and after some hours it turns a greenish yellow color. The dose of the above tincture is from 2 to 10 minims (5 to 30 drops). If tincture of stro-

phanthus be slowly propelled from an ordinary nipple medicine dropper it will drop from 2 to 3 drops to the minim, according to the size of the tube at its point.

In general the dose which has yielded me the best result. has been 4 to 6 minims, repeated about three times in 24 hours (every 8 hours). It is a useful method occasionally to suspend the use of the drug for 24 or 48 hours in order to more accurately determine its effects upon the heart. I have given 10-minim doses of strophanthus tincture (1 in 20) every 6 hours for two or three days without serious disturbances. The heart was, however, stimulated to rather violent though regular action; the ordinary paper for sphygmographic use (1 inch in width) not being sufficiently wide to take the whole stroke of the tracing lever.

Messrs. E. H. Sargent & Co., 125 State street, have kindly prepared for me a tincture of strophanthus according to the before described formula of Professor Fraser, and it is now kept in their stock. Parke, Davis & Co., of Detroit, have also furnished me with a tincture of strophanthus which has given satisfactory results.

163 State street.

GYNÆCOLOGICAL ANTISEPTICS, AND OTHER MEANS OF PREVENTING PELVIC INFLAMMATIONS. *By E. C. DUDLEY, A.B., M.D., Professor of Gynæcology in the Chicago Medical College.*

A CLINICAL LECTURE DELIVERED IN MERCY HOSPITAL.

Gentlemen:

Throughout the clinical course in gynæcology you have had opportunities of observing the manipulative features of numerous gynæcological operations, and you have therefore become familiar with operative methods. Now as the session is drawing to a close, I wish in a single lecture to present a concise resume of certain essential details which, although not distinctly operative, will yet materially aid you in securing union by first intention, and in protecting your patient against most serious, septic and inflammatory accidents. You are aware that the minor gynæcological operations are usually performed for the relief of maladies which are not often fatal, nor even always disabling, and yet these operations, if performed without proper precautions, may not only fail in union by first intention, but may even be followed by sepsis, metro-peritoneal inflammations, cellulitis, and sometimes even by death. Until very lately the statistics of minor gynæcological operations have contained so many discouraging results that the careful practitioner has often hesitated from fear, and has employed palliative and temporizing measures, however unpromising, to the exclusion of surgical measures however rational. You will recognize the importance therefore of any precautions which will render the minor operations and office manipulations comparatively free from danger. Doubtless you have already anticipated the subject

of this lecture, which is *Gynæcological Antiseptics*. You know that the essential object of antiseptics is cleanliness—not esthetic, but surgical cleanliness. To secure and maintain surgical cleanliness many antiseptic materials have been employed, of which the one generally approved is carbolic acid. A case in one of the wards lately gave us a striking illustration of the necessity of great care in making the solution. Some of the acid not being thoroughly mixed with the water settled to the bottom of the vessel from which a douche was given, and the pure acid passed through the syringe to the vagina, and its application produced a serious burn. The addition of 10 per centum of glycerine to the carbolic acid renders it more easily soluble. The strength of your solutions should be the same for gynæcological as for other surgical purposes. A saturated solution of boracic acid or a three per centum solution of salicylic acid, unlike the carbolic, is free from caustic properties, and is at the same time an excellent antiseptic. Permanganate of potassium in solution decomposes so readily that it is unreliable for antiseptic purposes. Solutions of corrosive sublimate may be conveniently made by mixing a 10 per centum alcoholic solution with sufficient water to make the required strength, which should be from 1 in 1,000 to 1 in 10,000. The stronger solutions are adapted to the cleansing of the hands and cutaneous surfaces, and the weaker for washing the sponges during operations. Corrosive sublimate tarnishes metallic instruments and destroys their plating, but has the advantage of being odorless, of not destroying the skin, and of being a reliable germicide. The ropy, stringy mucus plug which you have so often observed in the

cervix, and which is so difficult to remove, is readily coagulated by the application of a one per centum solution of corrosive sublimate to the cervical canal. This renders it easily removable, and it is also from a therapeutic standpoint an excellent application. For the washing of pus cavities you will find the peroxide of hydrogen, mixed with an equal quantity of water, a most satisfactory agent. It is especially useful in washing the bladder in cases of cystitis.

In all gynæcological manipulations you will recognize the importance of great caution to prevent the inoculation of one patient from another. The soap, glycerine, vaseline or oil for example, which is always kept by the operator's table for the lubrication of the fingers and instruments, is frequently contaminated with gonorrhœal or other virus, and may thus become the medium of infection. Neither the fingers nor the speculum therefore should be brought in contact with any of these lubricating substances unless they have been thoroughly cleansed of all vaginal and other secretions. Many a case of vaginitis, to say nothing of syphilitic infection, has been directly traced to the carelessness of the operator in this particular. Formerly the camel's-hair pencil brush and the sponge were employed as carriers of medicinal agents in making applications to the uterus. But you will readily appreciate the difficulty of keeping them properly cleansed and their consequent unfitness for repeated use. The surgical absorbent cotton now in general use may be wound upon an applicator or stick, or may be grasped in dressing forceps, and is admirably adapted for purposes of local medication or for wiping out the genital canal. It may be used in this way a single time, and then

destroyed. No special cleansing of the vagina and vulva is required for the ordinary office manipulation of these organs, except the vaginal douche, which the patient should be directed to use before coming for treatment. Interference with the interior of the uterus, however, is unsafe without more careful cleansing. Whenever the uterine cavity is to be digitally or instrumentally explored or treated, it is best to wipe out the vagina with dry absorbent cotton, and then with absorbent cotton saturated with a five per centum solution of carbolic acid with glycerine or a solution of corrosive sublimate 1 to 2,000. By this means the endometrium is protected against the entrance of septic matter, which otherwise might be carried in on the instruments from the vulva or vagina.

Preparatory to any operation on the genital tract or the abdomen, the field of operation and whatever may possibly be brought in contact therewith should be rendered surgically clean, and so maintained throughout the operation and during convalescence. These precautions apply even to the most trifling operations, which are by no means free from danger of fatal sepsis. Besides, however insignificant the proposed operation may be, it may become necessary to extend it beyond the limits of minor surgery. Frequently a seemingly minor operation in the beginning has ended accidentally or purposely in opening the abdomen or in some other serious procedure. Therefore the vulva should be thoroughly and repeatedly washed with tar soap and water, and during the week previous to operation the hot water vaginal douche should be employed twice daily each douche to contain a small quantity of castile or tar soap, except the last,

to be given just before the operation, and to be a solution of corrosive sublimate 1 to 4,000, or a 2 per centum solution of carbolic acid.

The ordinary practice of simply cleansing instruments after examination with water, or soap and water, is inadequate and unsafe. Esthetic cleanliness does not absolutely destroy the virus and prevent its instrumental conveyance from one patient to another, as many unfortunate women might bear witness. It is my universal custom to secure perfect surgical cleanliness in the following manner: First, let the instruments be carefully washed in the ordinary way; then let each instrument be thoroughly wiped over with absorbent cotton saturated with equal parts of carbolic acid and glycerine. This will require the use of two strong forceps, one in the left hand to hold the instrument which is being disinfected, and the other in the right to hold the cotton mop. When the instruments have been moistened with the acid in this way and the acid has been washed off with pure water, they are ready for use. If the instruments have been unusually exposed, as for example in a pus cavity, or if they have been in contact with specific virus, it is necessary to carry the disinfection absolutely beyond question by passing them slowly through the flame of a Bunsen burner or a spirit lamp before applying the carbolic acid. If they are to be used for abdominal section first wash them with ordinary soap and water, or, still better, boil them; then use the flame, then the carbolic acid, and then place them in a pan containing water which has been boiled and filtered or distilled. This water and the adherent acid makes an excellent solution in which the instruments may remain during the operation. Cleansing and disinfection of the operator's hands and nails is imperative, not only to guard

against the carrying of virus to the patient, but to prevent auto-inoculation by specific virus through some abrasion on the hand. The annoying presence of faecal matter during an operation and its possible septic results may be avoided by giving a preparatory cathartic so early that its action may be complete before the operation. In order to render sponges free from foreign and septic matter, first thoroughly beat and wash out all the sand. This may require hours of patient labor. Then soak them over night in dilute hydrochloric acid to dissolve out calcareous matter, and after washing out the acid the sponges, which will then be much softer and more elastic, may be put away in self-sealing fruit jars containing a 5 per centum solution of carbolic acid or a 1 to 2000 corrosive sublimate solution. The solution in which the sponges are kept should be changed once a week. The boiling of sponges is an excellent antiseptic measure but it causes great shrinkage and hardening and very much lessens their absorbent properties. The silk for ligatures and sutures may be rendered thoroughly aseptic by boiling five minutes in pure carbolic acid and then for twenty minutes in a 5 per centum solution. The best Turner's braided silk treated in this way may be kept for months without injury in small wide-mouthed bottles. The braided silk is preferable to the twisted, because the latter may even be destroyed by boiling in pure acid.

The field of operation rendered aseptic in the manner already described may be kept so during the operation if attention be paid to the cleanliness of hands, sponges, instruments and other appliances. The occasional irrigation of the wound during the operation and especially while the sutures are being tightened is desirable, to secure perfect contact of the wound surfaces free from blood and other foreign bodies.

The object of the after treatment is to maintain so far as possible the aseptic condition. At the end of the operation all particles of tissue and clots of blood should be removed and the parts thoroughly cleansed by the hot water vaginal douche, which should be repeated every twelve hours until several days after the removal of the sutures. After operation on the external genitals the douche should also be given after evacuation of the bowels or bladder. Schroeder and other German operators employ constant irrigation during gynæcological operations. This requires the patient to be in the dorsal position when the operation is intra-vaginal. Professor Englemann, of St. Louis, is one of the foremost American advocates of this method, which he fully described in a communication to the American Medical Association in 1885.

TREATMENT OF SEPTIC GYNÆCOLOGICAL WOUNDS.

Certain natural conditions are favorable to the healing of wounds of the cervix and vagina. The opposite vaginal wall in contact with the wound excludes the air and acts as a compress, and the vagina makes an excellent drainage tube. But the conditions after intra-uterine operations are less favorable, because the uterine canal is at an angle of about ninety degrees to the long axis of the vagina, and the cervical portion of this canal, naturally narrow, may have become narrower from disease. Therefore, secretions accumulating in the uterine cavity may not be easily expelled by force of gravity or by uterine contractions, but on the contrary may be confined and become infectious with inflammatory and septic results. The condition simulates that of a deep abscess at the end of a long

and tortuous sinus. On general principles the therapeutic indication is to cleanse the cavity and to keep it as nearly aseptic as possible by irrigation. Although this treatment is often followed by excellent results, it unfortunately is not free from grave objections, and often proves even more dangerous than the disease. Sometimes the stimulating presence of the irrigating fluid or of the canula through which it is injected causes the uterine walls to contract upon the instrument so forcibly that the return flow is impeded and the fluid passes into the fallopian tubes with excessive pain and possibly with grave inflammatory or septic results; moreover, intra-uterine injections without invasion of the fallopian tubes have many times been followed by painful uterine contractions, pelvic inflammation and death. They are therefore only to be employed when the canal throughout is sufficiently open to permit free outflow, and even then with great caution. To guard against obstruction of the outflow by contraction of the uterus upon the instrument it is necessary to use some one of the double uterine catheters, Mott's, Molesworth's, or Bozemann's for example, which have been specially devised for the purpose and which are similar in construction to Skene's double catheter for irrigation of the bladder.

The treatment of septic wounds in the uterine cavity involves some of the vexed questions in gynæcology. Intra-uterine sepsis may be indicated by the character of the discharge, by the pain, by the temperature, by the pulse, by physical signs, and by the history of the case, but it is often difficult to determine whether the disease is here confined or whether the wounded surface has not rather served as an

avenue through which bacteria have passed to the pelvic cellular tissue or to the peritoneum, and there produced results which not only could not be reached by intra-uterine treatment, but which such treatment might even aggravate. The patulous condition of the uterine canal in puerperal cases makes the organ easily and safely accessible and the treatment therefore more effective; but the most effective antiseptics in surgical gynæcology is generally prophylactic.

OPIUM, QUININE AND ICE.

In addition to antiseptics certain other precautions against cellulitis, peritonitis and metritis should be enforced, especially in cases predisposed by a previous attack. Preparatory to operation the patient should be fortified by moderate doses of opium combined with full doses of quinine, and for two or three days after the operation this should be continued and supplemented with the ice-bladder on the hypogastrium. The thin rubber ice-bladder is most convenient, but the ordinary sheet rubber such as is used by dentists for the rubber dam may be substituted by gathering up its sides and corners above the ice and tying them with strong twine. To prevent the annoying condensation of water on the outside of the rubber bag another piece of rubber or oiled silk may be wrapped about it. Experience has shown that great reliance may be placed upon opium, quinine and ice, not only for prophylaxis against inflammation but also as a remedy in the acute stage, and that the ice is much more certain in its results than the time-honored and conventional flax-seed poultice.



CASE OF HERPES OMO-BRACHIALIS.

CASE OF HERPES OMO-BRACHIALIS. By JAMES I. TUCKER,
A.M., M.D., *Chicago*.

[Read before the Chicago Medical Society, March 21st.]

Herpes is one of that class of skin diseases which are especially interesting because, though characterized by a distinctly defined cutaneous eruption, they are not, properly speaking, diseases of the skin. I believe that it is universally conceded by physicians that they belong to the neurological group, and that the peripheral phenomena which they exhibit are traceable to altered trophic centres residing in the ganglion or to disturbed trophic innervation. This fact has been repeatedly observed in frontal zoster, and is doubtless equally true of zoster appearing in other regions besides those presided over by the ganglion of Gasser and branches of the fifth pair.

The case to which I wish to call your attention is the following. Mr. J. P., aged 36 years, had for many years been an invalid owing to indiscretions in his youth. He had been very intemperate in the use of spirituous liquors and sexually inconstant; he contracted syphilis and went through all the several stages of this disease, which was aggravated by the injudicious treatment of a border physician. He was one of a family every member of which had been afflicted with some form of nervous disorder, a family so peculiar in this respect that I made the phenomena exhibited by them the theme of a paper which I read before this society a few months ago and which I entitled "Undiagnosable Maladies." He came first under my professional care about five years ago. He was then much emaciated, anæmic, and suffering from a profuse serous diarrhoea and a remarkable effusion of synovial fluid

of the knees, the patellæ literally floating in a sea of this fluid. He recovered from this disease and found employment as a proof-reader, and pursued his avocation diligently till about six months ago when he completely broke down and came under my care a second time. His habits were now and for a long time had been good in every respect. His principal complaint was a cough—a cough of deep, sepulchral sound, which gave him no rest night or day. I never listened to such a profound and persistent cough before, and it was useless also, for there was no mucus or other foreign matter to be expectorated. Knowing the history of the family as well as I did, and educing no satisfactory evidence of organic disease of lung, heart, liver or kidney, as a temporary makeshift I called it *nervous*. On the 3d of December he came to see me on account of a pain of a rheumatic character in the right shoulder and arm. On December 4th there appeared an eruption consisting of a few vesicles, almost invisible, in clusters on an inflamed base. They crept hour by hour and day by day in quick succession, attended with an almost insufferable sensation of heat, an *ignis sacra* so intense that according to his description it seemed as if the shoulder and arm were in the state of ebullition and as if, if he had looked at them, each vesicle would have been seen undulating like the rings of a polyp. The vesicular eruption had fully evolved itself by the 9th, and occupied the shoulder and outer aspect of the arm and forearm, crop after crop appearing and following the course of branches of the brachial plexus, notably of the circumflex, the musculo-spiral, the external cutaneous and the median nerves, and terminating in an immense and extremely painful bulla situated upon the ball of the thumb. These vesicles in due course of time passed through the various stages of increase,

confluence, maturation, decline and termination. The eruption had entirely disappeared by December 15th, though the inflamed bases remained distinctly visible. The causalgia ceased, and more remarkable still, the chronic cough disappeared also altogether. The eruption was such an unique example of this rare form of herpes that I took a photograph of it, and have it here to exhibit to you.

To relieve the pain and burning sensation I resorted to hot fomentations and the oleate of cocaine. I found an ointment of the boro-glycerite to be useful. It was of very little use to employ opiates and anodynes, for he seemed to be proof against them. He was very nervous and sleepless, but morphia in large doses had very little effect upon him; and one time, during his former illness, I recollected he took two hundred and forty grains of chloral hydrate (of his own accord) at a single dose, with no effect except to make him a little delirious! In treating him I could not but think that one of the spinal ganglia had been affected by the old syphilitic virus, and accordingly made use of the iodide of potassium.

In this case several problems present themselves for solution:

1. What may have been the relation existing between the cough and the eruption?
2. Why did the cough cease upon the appearance of the eruption?
3. May the ganglion have been the seat of a tertiary syphilitic alteration and undergone a metastasis from the ganglion to the skin, and culminated in a morbid peripheral trophic and sensitive phenomenon?

52 Douglas avenue.

EDITORIAL.

ARTIFICIAL ILLUMINATION.

The matter of artificial illumination is one that concerns man's well-being in many ways, and deserves much thought.

It is not the purpose of this article to deal with the question of relative expense and consequent economy, important as that is, but rather to consider the influence upon man's well-being, both in the general and in the local effects produced by different methods of illuminating.

So far as the general influence on the human body is concerned there are certain important requisites. These will vary somewhat with the attendant circumstances under which the light is to be used. The same conditions may not be equally required in the study of the professional man, the counting-room of the merchant, and the factory where artisans are employed. All of them do require proper amount, and right direction of the light, and steadiness of it. These are important desiderata so far as the eyes are concerned.

As influencing the general health, the consumption of the oxygen of the air and the substitution for it of noxious gases, especially when ventilation is defective, are matters of no small import.

The most generally used methods of illumination may probably be classed as, first, by oil, animal or vegetable; second by gas, and third by electricity, these having led to the almost total disuse of other modes of illuminating. Petroleum when purified is comparatively free from danger; furnishes good illumination, and a steady flame. Its consumption of oxygen and giving off of noxious gases and heat are its chief objections. Next in order comes gas as usually furnished in centers of population. The advantages and disadvantages of

this differ very much, owing to various circumstances, as the material from which it is manufactured, defects in methods of distribution, etc. The good illumination from it generally and the convenience attending its use have led to its extensive use for illuminating purposes. The objections to it, viewed exclusively from the view of its influence on man's physical condition, are general and local. When there is escape of gas into man's dwelling-place, as from defective pipes or otherwise, the deleterious effect is shown in various ways upon the human system, even resulting in death when breathed in a moderately diluted state. When more diluted with air, the deleterious influence of breathing it varies only in degree. It consumes, also, oxygen from the air, and gives off poisonous gases and heat and unconsumed carbon, thus vitiating the air breathed, impoverishing the blood and depressing the system.

As usually employed, it burns with more or less unsteadiness of flame, which is very trying to the eyes. The amount and the direction of this illumination are often very objectionable.

The third method, by electricity, which is now coming into more general use, appears to obviate many of the objections which attend the use of most of the other methods of illumination.

The two forms in which it is most generally used are what are called the *arc light* and the *incandescent light*. Both forms possess the advantages of not consuming the oxygen of the air and substituting therefor deleterious gases, or permitting unconsumed carbon to escape, and they do not greatly heat confined rooms, whilst giving good illumination. The arc light possesses advantages over the incandescent light in having greater illuminating power, in consequence of which it seems to be better adapted to illuminating large spaces; but it generally possesses the disadvantage of being more or less flickering, and therefore is trying to the eyes. Because of its brilliancy it should be placed as high as practicable, especially in public thoroughfares. The paleness of the light given by

the arc light makes it in some respects a less agreeable light. The incandescent light is slightly tinted, and therefore is more agreeable. It is more steady, gives a less dazzling light, and seems, in many respects, better suited for the illumination of smaller spaces.

Dr. J. A. Andrews, of New York, made a carefully prepared report, last year, to the *American Ophthalmological Society*, on the electric light, from which the following practical points are extracted. He says:

It is of practical importance to learn something about the relative effect of the different forms of artificial light on the human retina. All forms of artificial light contain, as compared with daylight, an excess of waves of long wave-length,—i. e. they are of a *yellowish* hue. In the electric light the short-wave rays predominate,—i. e. the violet rays.

As far as mere *color* is concerned, the *electric light* approaches nearer to that of the *sun* than does the *gas* or *lamp flame*. But which has the more to do in producing evil effects on the eyes after long and continuous work by artificial light—*color* or *heat*?

Gas emits the greatest amount of heat; petroleum lies between gas and electric light.

Tyndall has shown that the value of the luminous radiation from the flame of oil, gas, and the electric light is as follows:

	Luminous.	Obscure.
Oil flame.....	3	97
Gas flame.....	4	96
Electric light.....	10	90

We have therefore, with the *electric light*, the *maximum of light* with the *minimum of heat*.

Chardonnet (Vision des radiations ultra-violettes, Compt. Rend. hebdomadaire des Seances de l'Acad., No. 8) has recently made some interesting investigations on the absorption of ultra-violet rays by the media of the eye, particularly by the crystalline lens, this absorption not being done without fatiguing the eye, especially when it concerns the long and brilliant spectrum of the *electric arc*. But he found on photographing the spectrum of the incandescent electric light, that the spectrum hardly passed beyond the visible spectrum; hence he inferred that this incandescent electric light saved the media before the retina the labor of absorbing and diffusing the ultra-violet spectrum. I do not believe that we should attach much practical importance to this explanation. It is easy to convince one's self that the inconstant and unsteady intense glare of the *arc electric light*, only faintly modified by an *opal* or *ground-glass globe*, is extremely distressing to the eyes.

So far all the cases of injury to the eye from the electric light recorded in medical literature have resulted from exposure of the eye in close prox-

imity to the *arc electric light*, and this has, in every instance, been of a very intense brilliancy, generally that used for street-illuminating purposes.

So far as I have been able to ascertain, no case of accident to the eye has been reported as having been caused by the *incandescent electric light*. Of the 1100 persons whom I have examined and observed during the past year who work by day or by night for many hours by the *incandescent electric light* of *Edison's lamp*, there was not a single instance of injury to the eye; but, on the contrary, I was surprised to find that a considerable number of these persons, with a high degree of myopia and choroidal changes, were absolutely comfortable while working by this light, and they expressed themselves as having experienced a great improvement in the condition in their eyes since they had begun to work by the electric light (Edison lamp of twelve to sixteen-candle power), always shaded from the eyes, the light being thrown down upon the work from a short elevation. Many persons among type-setters and copyists have told me that formerly, when gas was in use in the establishment in which they worked, they went home from their work with their eyes red, watering, and aching, and this was especially the case among short-sighted persons, but that they could work longer by the Edison light (the arc light distressing them), and without discomfort. Of course, every form of artificial light is more or less dazzling when the source of light casts its image on the retina. We certainly can avoid this dazzling in the gas or petroleum flame by means of an appropriate shade; but, in order to secure the requisite amount of illumination, we must either approach the light close to the head, and thereby expose the eyes to the undesirable radiant heat, or increase the illumination at a greater distance, and thereby make an increased demand upon the vital parts of the atmospheric air in the room, thus vitiating the latter, which is a very undesirable equivalent. The amount of heat radiated by the electric light is very unimportant; and when, after sunlight, we add to its unrivalled qualities as an illuminator the steadiness and absence of combustion of the *incandescent lamp of Edison*—there being, therefore, no consumption or vitiation of the atmospheric air induced by it—together with the practical clinical fact that it is a greater comfort for even persons with existing eye affections to work by this light than by any other artificial illuminator, we must, from a therapeutic point of view, concede to the incandescent electric light advantages not possessed by any other artificial means of illuminating; and any one who has given the subject thoughtful consideration will at once see the great blessing which would come from introducing this kind of light into our *night-schools, theatres, public halls*, and those innumerable *counting-rooms* in great cities where large numbers of human beings work by artificial light during the entire day or night, the demand upon the atmospheric air by the individuals alone being, in the absence of adequate means of ventilation, and in the majority of instances with very little ventilation at all, in these overcrowded places, terrible enough without the additional mischievous agent in vitiating the atmospheric air present in the many *gas flames*. The advantage of using

the incandescent light in our ophthalmoscopic dark-chamber must be evident to every ophthalmic surgeon.

My conclusions are as follows:

The *arc electric light* is not so objectionable on account of its intense brilliancy, which can be modified by means of an opal or ground-glass shade or globe.

The gazing at the *arc lamp* for many seconds is attended with great risk to the eyes. The *arc light*, in its present state, should be positively rejected as unsuitable and actually harmful to the human eye, particularly on account of its unsteadiness.

The *incandescent light of Edison*, because of its steadiness, adequate power, and composition, is safe, and occupies at present the first position as a means of artificial illumination. By its use the accommodation of the eye is less taxed than by other illuminators.

The light may advantageously be placed on the table in *front of the person* using it, but it should *never shine directly into the eye*, but always be *completely hidden* from the eyes by means of an opaque shade made of glass or tin, and the light be thrown down upon the work. For obvious reasons, it is further believed that the incandescent electric light is especially beneficial to myopes.

Discussing the report, DR. AGNEW said: I would ask for a moment to say that Columbia College, of which I am a trustee, has built a very large room in connection with its library for the night use of students. I had something to do with the introduction of the incandescent light into it. Each table is provided with an electric light, over which is placed a conical shade to protect the eyes from the direct light. For two winters we have kept the library room open until ten o'clock every night except Sunday night, and our students have been encouraged to come there. The library was also thrown open to the public, a simple introduction with a card being all that was necessary. Persons engaged in literary pursuits have come in considerable number to the library to study. A number of persons with sensitive eyes have come there to test the effect of the incandescent light, and have obtained permission to do continuous work there every evening. They found that they could work longer with less detriment to the eyes there than in any other place to which they had access. They have come from rooms where they have had gas and kerosene lamps, many of them having previously secured what they had supposed to be the best means of illumination. The introduction of the incandescent electric light there has proven of great advantage. I agree with the writer in all that he has said bearing upon that particular matter. This matter is worthy of the consideration of those having to do with colleges or schools requiring work at night. Aside from the fact of its not vitiating the air, the steadiness of the light, and the fact that it is directed upon the work and shielded from the eye commends it. I think that air-poisoning has a good deal to do with the progress of eye diseases.

FOREIGN CORRESPONDENCE.

MEDICINE IN VIENNA AND PARIS.

To the Editor of the JOURNAL AND EXAMINER.

Dear Sir:

The man in busy practice with little time to read, if he takes a deep interest in his profession, often feels a desire to break off from the monotonous routine of his labors, and visit the great centers of medical learning, see and hear the men who teach, and make himself acquainted with their manner of treating their patients.

In thirty years of active professional work this is the only desire that I have gratified.

While the few random notes that this letter contains will perhaps be nothing new to the man who stays at home and by diligently reading his text-books keeps himself abreast of the times in his profession, still I believe there is an advantage in seeing men treat their patients as compared with that of reading their writings, not only in the matter of having the subject illustrated by a living patient who is examined before you, and whom you may examine yourself, but I believe further that men really often treat their cases themselves very differently from the manner in which they recommend the same to be done when they write a text-book, or an article for publication in a medical periodical. In what I shall say I shall purposely abstain from reporting or discussing unusual or extraordinary cases, confining myself to those that fall under our care at every turn in actual practice.

Most American physicians whom one meets here are young men just from the colleges, and they are too often only interested in such cases as a man would see only occasionally in a lifetime. They are eager to see Bibroth resect the pylorus for cancer, and are constantly presenting their cards to Pèan to get a chance to see operations, that they never ought to attempt to perform.

But I am even more disgusted with some of the lady physicians who come here to Paris.

They will be pushed and jostled amid the great throng that follow the surgical service of Gillan at Hotel Dieu; sit on a back seat with an opera glass in hand to see Pèan amputate a man's leg at the hip joint. But go to the children's hospital, where Simon holds his clinic, and one finds not a single one of them there.

The manner of teaching medicine in Germany is somewhat different from that practiced in France.

In Vienna, for example, a patient is wheeled into the amphitheatre, a couple of students are called down and requested to examine the case and give a diagnosis.

After they have finished their examinations, the professor reviews the case and corrects any errors that may have been made. He discusses the case fully, you are informed from time to time as to its progress, and when it dies you are expected to attend the autopsy.

You get but little chance to examine the cases at the bedside unless you take one of the private courses, given by one of the assistants.

Here in Paris there are so many hospitals and so many good men who give bedside instruction, that one can follow them and personally examine every case of interest.

While at the bedside the professor tells you which case he proposes to make the subject of his morning lecture; he then, after examining the case in your presence, giving its most salient points, repairs to the lecture-room and discusses the disease more fully.

Looking over a period of twenty years, at which date I made my first visit to the continent, I find many changes in the treatment of diseases, especially those of an acute character.

These changes are of two kinds: first, a tendency to go back to the practice of our fathers in the matter of the administration of mercury, and the more frequent practice of blood-letting; and second, a more complete and absolute expectancy. While the late discoveries in bacteriology have shed new light upon our means of diagnosis, unfortunately it has added but little to our stock of knowledge as far as therapeutics is concerned.

There is another peculiarity about the prescriptions of most continental physicians that is perhaps worthy of note, and that is, that they scarcely ever combine two remedies in the same recipe, or even give the patient two active remedies at the same time.

Arterial sedatives, such as aconite, veratrum viride, and the like, so commonly prescribed with us, I have never heard even mentioned, much less prescribed, during my present stay in Europe.

We smile with pity at the laity who swallow quack nostrums and make millionaires of the Ayers, the Jaynes and the Warners, and yet we physicians of the West, at least, allow a few enterprising drug houses that manufacture beautifully colored tasteless elixirs and pleasant syrups, said to contain the medicinal properties of roots and herbs of whose real action we know little or nothing, and the best that can be said of them

is that they are generally inert. I say that we allow ourselves to be humbugged on a scale that is gigantic, and for which there is no apology except that like the non-professional world we are easily gulled, or never stop to seriously investigate the subject. But I had forgotten that I was writing up medical matters in Europe and not in America.

Bamberger, of Vienna, who is one of the most scientific men in Europe, I believe, is a perfect skeptic as to the beneficial effects of drugs in the treatment of acute diseases. Though an old man and rather feeble in health, he never flags in his interest at the bedside, examines his cases with the most painstaking exactness, and if they die, follows them to the dead-house and views with an anxious eye every cut made by the scalpel that is either to prove or disprove the diagnosis made during the life of the patient.

Ten years ago he was using in typhoid fever the cold baths after the manner and teachings of Liebermeister. Now he uses cold baths much more sparingly, in fact, only when the temperature reaches 40° C. He then uses them every three or four hours until the heat of the body is reduced to 38.5° C. In general, however, he prefers to lessen the bodily heat by repeated cold or tepid sponging.

The only medicine he gave a series of patients I saw him treat was seven grains of quinine at 1 and 5 P.M. The large doses of quinine, recommended by Barthelow and other American authors, are universally condemned here. Though such quantities lessen the temperature, the effect upon the heart's action and nervous system is most disastrous. Nothnagel's treatment of typhoid fever is essentially the same as that adopted by Bamberger, except that he uses the cold baths a little more freely.

In cases where heart-failure becomes a prominent symptom, he gives nitro-glycerin in doses of from .001 to .002 grams three or four times in the twenty-four hours. Great stress is laid on the nourishment of the patient, but only fluids are allowed until the patient is well on the road towards convalescence. Milk and animal broths are exclusively used.

Though a slight albuminuria is nearly a constant symptom of this disease after the 7th to 12th day, an excess of albumen in the urine is a grave symptom.

This should be watched, and when it appears combat it by small doses of digitalis alternated with one-grain doses of calomel.

Here in Paris the treatment of typhoid fever is essentially the same as that in Vienna, except that the cold baths are not generally used.

About 15 grains of quinia is given in the twenty-four hours, divided usually into four doses.

Alcoholic stimulants are used sparingly from the outset, giving the first week about 12 ounces of Bordeaux wine, and after that adding a certain amount of brandy. Coffee is given freely for its tonic action upon the heart, and in Paris bread and rice is added to the soup.

In connection with this subject of the treatment of typhoid fever, I have made most thorough inquiry as to the use and their effects of antipyrin and thallin.

Last summer, in an article to the *New York Medical Record*, I gave the opinion of the best men in Germany, as far as I could ascertain, as to the effects of these remedies in this and other febrile diseases. I also gave a review of a very interesting article published in the *Wiener Medizinischer Blätter*, giving an extensive experience with these medicines. Still, I see in nearly every journal I receive from America some one who

still treats his cases of typhoid fever with these, in my opinion, most unsafe and dangerous agents.

The writer in the above periodical says that he knows that the remedy has a bad effect in both typhoid fever and pneumonia, and attributes the death of two patients suffering from the latter disease, directly to the administration of antipyrin.

Nothnagel says that while this agent will reduce the temperature of the body to any point desired, it has no effect on the duration of typhoid fever; in fact, its tendency is to prolong the disease—to increase the tendency to hypostatic pneumonia, heart-failure and other untoward symptoms that originate in an enfeebled heart's action, and a general nervous prostration.

Germain Seè, in a late clinical lecture at Hotel Dieu, says:

"Antipyrin in typhoid fever is worse than useless. It never ought to be given.

"In the fever of tuberculosis it will reduce the temperature on the day it is given, but during the apyrexia the patient will sweat more profusely, will feel weaker, and in every way be the worse for the treatment. In this disease attend to the patient's digestion and elimination, and abjure all remedies that produce a profound impression upon the system.

"Never give the remedy for its antipyretic effect, except in a form of fever, the course of which is of short duration and in which there is no ultimate danger from a general anæmia.

"You will find rheumatic patients occasionally who cannot take the salicylate of soda on account of its unpleasant effects upon the stomach or the nervous system.

"If the disease be of an active or sthenic type, you may give the antipyrin with advantage. In certain forms of neuralgia you will find the remedy a good one."

Either at the bedside or in the lecture-room, I have interviewed Jaccoud at Le Pitié, Professor Peter at the Necker, Professor Potain at Le Charité, and Professor Dieulafoy at the School of Medicine, and they all tell one story, and that is, give *no antipyrin in typhoid fever*.

If I shall be able in this article to convince the readers of this journal, or even a small part of them, that this remedy is one that never ought to be given in any form of fever that has a natural tendency to run a protracted course, I shall certainly have rendered a most valuable service to their patients.

BRIGHT'S DISEASE.

Professor Dieulafoy, who has lately been appointed to a professorship of practice in the School of Medicine, is a young man, and one of the finest teachers at the bedside and in the lecture-room that I have ever heard. He opened his course after the holidays by a series of lectures on diseases of the kidneys.

He says in relation to Bright's disease that the nice points that authors try to make as to the particular form of lesion that exists in any given case will all fail you generally at the bedside. That, in fact, all the different lesions are often found in the same kidney, and as to which one predominates is a point that can only be determined with certainty by a post mortem examination. His treatment all resolved itself into a milk diet and blood-letting.

He insists on blood-letting whenever the patient presents any symptoms that portend uræmic convulsions.

Professor Jaccoud's treatment is the same, in addition to which he is now using the inhalation of oxygen gas.

He says that the number of casts or the amount of albumen in a given case he considers of less importance in a prognostic point of view than the specific gravity of the urine. You may

think the patient better because there is less albumen in the urine, but unless one finds an improvement in the weight of the urine, he will be disappointed. He insists on blood-letting, and that early if the case be a grave one.

Professor Peter relies mostly on a milk diet in his treatment, but gives small doses of digitalis on alternate days.

He says that the tincture or fluid extract of digitalis is never reliable.

He advises an infusion or a decoction, but he prefers the former. In Vienna they also use the remedy only prepared in this way. In the latter city they usually give one-grain doses of calomel on alternate days, using the digitalis on the day when the calomel is not given.

In Professor Simon's wards in the children's hospital there are always a large number of cases of Bright's disease.

Professor Simon says that there are two diseases that children tolerate much better than adults, which fact should always be taken into account when formulating a prognosis; and these are cardiac and renal affections.

The patients in this hospital range in age from 3 to 14 years. He begins the treatment with digitalis, using an infusion. He continues this only three or four days. He watches the pulse, and if it begins to grow more frequent, he suspends the remedy for a few days and then begins again. He keeps the bowels open with small doses of calomel. He washes the surface twice a day with hot alcohol, and if the patient cannot tolerate the digitalis by the stomach, he adds that to the alcohol used for the bath. He uses a hot bath twice a day, and envelops the body in carded wool for two hours after each bath. In case of convulsions he uses an injection of hydrated chloral. He applies cups to the spine, and draws blood in proportion of the age and strength of the patient.

PLEURITIC EFFUSION.

Among the working-classes here, who are constantly exposed to the vicissitudes of a damp winter climate, with their houses generally insufficiently heated, they have in the hospitals here a large number of cases of serous effusion into the pleuritic cavity. In the service of Professors Jaccoud and Peters I have witnessed the management of quite a number of cases of this kind. The former is a firm believer in the efficacy of early tapping.

As soon as the effusion reaches an amount to exceed 32 ounces, he uses the aspirator and draws off the fluid. On the other hand, Professor Peter only taps the patient when the fluid fills the pleural cavity to such an extent as to interfere with respiration, or deranges the circulation by the displacement of the heart. He relies mainly in his treatment on blisters to the chest, using them of large size and changing from one locality to another on the chest walls.

He sometimes gives the iodide of potassium in five-grain doses three times a day; but blisters, combined with a generous diet and plenty of wine, are his main reliance.

Professor Jaccoud, to a few of his patients, gives quinine in three-grain doses three times a day. But his great remedy in these cases is *milk*. He now has a patient in the wards to whom he gives one gallon of milk every twenty-four hours, and to whom he allows no other diet.

He claims that this manner of treatment is far better than giving medicines, such as the iodide of potassium and the like; that the milk has a double action: that is, to nourish the patient, and to act powerfully upon the kidneys, causing absorption of the effused fluid.

Like women in the matter of bonnets, we doctors follow fashions in rushing after new ideas in the treatment of diseases, and when we take a start in a certain direction are all too much inclined to run in the same rut.

The mania now in Paris is the milk-treatment. Though, like most other hobbies, it is probably often ridden without sense or judgment, it has one redeeming feature in its favor, which cannot always be said of medicines proper, and that is, that it is a harmless kind of craze.

Professor Dieulafoy, in his opening lecture at the School of Medicine, advocated in most eloquent terms the practice of early puncture in cases of pleuritic effusion. He says that whenever the amount of the fluid in the chest is as much as thirty-two ounces, it is one's duty to warn the patient and the family that the case may terminate fatally at any moment, and cites a number of examples in his practice to prove the truth of this assertion.

PNEUMONIA.

In the broncho-pneumonia of children the treatment here is ipecacuanha to the extent of vomiting the patient occasionally, the use of the bromide of potassium to quiet the cough, and the free use of alcohol. No opium is given. Mild forms of counter-irritation are applied to the chest.

In croupous-pneumonia the treatment is expectant and alcohol is used, though Professor Jaccoud gives tartarized antimony in the early stages when the patient is robust.

INTESTINAL OBSTRUCTION.

A man aged 37 years was admitted into Hotel Dieu, in the service of Professor Gillaux, having all the symptoms of intestinal obstruction, which had existed for eighteen hours. Gillaux said that he was unable to determine the exact nature of this obstruction, and, as the case was not yet

sufficiently grave to warrant an abdominal section, he would put the man to bed, give a large hypodermic of morphine, and apply a mild faradic current to the abdomen for twenty-four hours, unless the patient's symptoms grew worse. He accordingly applied a large wet sponge to the abdomen, and on top of this he applied one electrode, and the other opposite over the spinal cord. This was kept up for twenty-four hours, at the end of which time the bad symptoms had all disappeared, and the man made a good recovery. Gillaux said that this is his usual treatment of such cases, and he had often been rewarded with as equally brilliant results as in the present case.

M. PASTEUR.

During my stay in Paris I have visited at intervals M. Pasteur's institute, and although he is out of health himself and is spending the winter in the south of France, I have witnessed a large number of patients treated by his method of anti-rabic inoculation.

I have also watched with great interest the medical journals here, and listened with attention to the men who lecture at the School of Medicine, in order to form an idea of the sentiment of the profession here in France as to the merits of this, the greatest discovery or the most plausible humbug of this 19th century.

In the medical press the subject is but little discussed, and in speaking of M. Pasteur the faculty often refer to his great researches in bacteriology, but say little or nothing, pro or con, as to the merits of his claimed anti-hydrophobic discoveries. Still I am inclined to believe that the majority of the profession here are believers in Pasteurism, and all of them have perfect faith in his personal honesty and integrity.

Early in January, Dr. Vulpian made a report before the Academy of Medicine, giving the statistics of M. Pasteur's institute up to December 31st, 1886.

Up to that time there had been treated there 2,682 cases. Of these there were 518 who had been bitten by animals only supposed to be mad. The balance, that is 2,164 cases were bitten by animals known to be affected by hydrophobia.

Of these 29 had died up to that date, or 1.34 per centum. Previous to M. Pasteur's treatment statistics show that 16 persons out of every 100 bitten by rabid animals had died of rabies.

This result, of course, according to Dr. Vulpian and M. Pasteur's admirers in general, stamps him as one of the greatest benefactors of his race.

During the latter part of the summer, and early autumn of 1886, a larger number of cases treated at the institute had died than during any corresponding period of time before. This decided M. Pasteur to use a stronger virus for his injections, and he accordingly instituted *la Méthode intensive*.

Up to this time things went on quietly, and M. Pasteur treated, from month to month, a larger number of cases, and collected from all quarters money with which to found a great institute, to more thoroughly carry out his work. If there was much opposition to his method, it did not show itself upon the surface.

Early in January last, Professor Peter, who is one of the first physicians in Paris, read before the Academy of Medicine the history of a case that he had lately treated in connection with a fellow practitioner, and which case had been treated at the Pasteur Institute. This patient died fourteen days after the last treatment of a form of rabies called the paralytic form of the disease, a mode of death which uniformly follows when ani-

mals are inoculated with the virus of hydrophobia. Professor Peter described in detail the patient's symptoms, and avowed openly that in his opinion the patient died of the treatment given, and not from the bite of the supposed rabid animal.

This report produced a most profound sensation, not only in professional ranks, but the secular press, taking sides either for or against M. Pasteur, discussed the subject at great length. Professor Peter, though attacked most violently by the friends of M. Pasteur, is a brave little fellow, and defends his position with a tenacity and vigor that are terrible. Two weeks after this, in a clinical lecture before us at the Necker, he spoke for two hours, in substance as follows:

"On December 31 we had admitted into our service here a man 30 years of age with high fever, severe headache and pains in his loins. No diagnosis was made out at first. Four days later the patient broke out with the small-pox. We have had five cases of small-pox follow this contamination in the wards. As soon as it was known that the first patient had small-pox all the other inmates were vaccinated, that is, four days after they were infected. One of these patients died of small-pox, and all the others who had the disease had, at the same time, the vaccine or cow-pox, each disease running its regular typical course in each patient, but being modified by the circumstances that the two forms of disease existed at the same time.

These cases illustrated a law long since recognized; that is, for preventive inoculation to be of any account it must be practiced before the patient is exposed to the disease for which the preventive vaccination is practiced. Therefore, for the inoculation of M. Pasteur to be of any account, according to all the laws of analogy in such cases, it ought to be practiced

on the patients before they are exposed to the hydrophobic poison.

Within the last few days I have treated a patient aged 14 years that had been bitten on the finger by a cat. The animal was not suspected at the time to have had hydrophobia, but as two horses belonging to the child's parents six days later died of this disease, it was suspected that the cat was mad.

At this date, that is six days after the boy was bitten, he was taken to M. Pasteur and was treated by *la Mode intensive* for twelve days.

Six days after the last treatment, the patient was taken, early in the morning, with a pain in his back and a general malaise. A physician was called who told the parents that the boy had simply a lumbago and would soon be all right. Two hours later the physician was called back to see his patient, whom he found suffering from complete paraplegia. Professor Peter saw the patient at this time, who grew gradually worse, the paralytic symptoms extending rapidly upward and producing death at the end of twenty-six hours.

This patient had no convulsions, had no difficulty in swallowing water, and, in fact, had no true hydrophobic symptoms.

Professor Peter claimed most strenuously that this patient, as well as the one he had reported at the Academy, had died of the treatment he had received by M. Pasteur. He says that the friends of inoculation claim that the paralytic form of the disease sometimes occurs where no treatment has been used. I say that there have been recorded nine cases of paralytic hydrophobia in 200 years; while M. Pasteur's treatment has given us seven out of eight of the last deaths that have occurred after having been inoculated by him."

Professor Peter not only attacked M. Pasteur's whole plan of treatment but his statistics as well, claiming that the figures

given by him did not include all France. That taking France altogether for thirty years prior to Pasteurism the mortality was 30 per annum; that if the same territory be included in the statistics it would give a mortality for 1886 of 42. Since this date Professor Peter says that a report of two other cases have been sent to him, where death occurred in the same manner.

W. S. CALDWELL.

Paris, February, 1887.

SOCIETY REPORTS.

TRANSACTIONS OF THE CHICAGO GYNÆCOLOGICAL SOCIETY.

Regular meeting, Friday, January 21, 1887.

I.—PARKES. A Case of Interstitial Pregnancy, With Removal of the Product of Conception Through the Uterine Cavity.

II.—BARTLETT. A Case of Obstetrics, with Remarks.

III.—ETHERIDGE. Antiseptic Tamponnement of the Vagina in the Treatment of Pelvic Inflammations.

The PRESIDENT, CHARLES WARRINGTON EARLE, M.D., in the chair.

I.—PROFESSOR Charles T. Parkes made the following remarks upon:

A CASE OF INTERSTITIAL PREGNANCY, WITH REMOVAL OF THE PRODUCT OF CONCEPTION THROUGH THE UTERINE CAVITY,
with the exhibition of the specimen.

The specimen, which I exhibit to-night, comes from a case which has been of extreme interest to me, and is, I

think, the remains of a conception, which was certainly outside of the uterine cavity, and which I succeeded finally in delivering through the womb. It was taken from a lady, 33 years of age, who, seven years ago, was delivered of a child at full term. The child is now living. A year after that, she was taken with hemorrhage and had quite a severe bleeding, every month or second month, for two years. Some time after her pregnancy, she was operated upon for laceration of the cervix, but the operation had little effect upon the hemorrhage. Two years ago she again became pregnant, and was delivered at the proper time. This child is still living. The lady came under my charge last September for hemorrhage from the uterus. On examination I found a globular mass in the lower portion of the abdomen, as large as two fists, very hard and tense. When I felt it through the abdominal walls, my impression was that it was a fibroid growth. Upon digital examination, I found the cervix dilated sufficiently to admit the finger very readily, which went over the surface of a smooth mass in the uterine cavity. This led me to think that it was a fibroid tumor with a broad base, probably a submucous tumor, which gave rise to the hemorrhage. On that supposition I placed her on the ergot treatment and kept it up for a week, twenty drops of the fluid extract every six hours. This gave rise to such severe attacks of pain that the patient could not bear the treatment any longer, but it had the effect of diminishing the flow of blood and increasing the dilatation of the cervix. I took pity upon her on account of the pain and gave a couple of hypodermic injections of morphine, when the pain ceased, the cervix began to contract again and soon reached its normal size, and the patient recovered from the acuteness of the disturbance, but the hemorrhage still continued, accompanied with a flow of muco-pus. I attended her from the 16th of September until the 14th of October; as she was getting along pretty well, I supposed the action of the ergot would gradually force this mass down so that it could be removed. My visits ceased and I heard nothing more from the patient, except an occasional report that she was getting along in the same way, until the 10th of December, when her husband came into my office and showed me a little piece of bone, or a piece of hard substance that looked like bone, which he said his wife had picked off the

napkin. It had the appearance of fetal cranial bone. He asked me what it meant, and I told him I could not say, but would see his wife. On inquiry, I found that the flow of blood had ceased, but the flow of pus had increased, and occasionally there was extruded a piece of this bony substance. On digital examination, I discovered the os and cervix filled with particles of this bony substance, and after removing them, I found it impossible to introduce my finger into the cervix. The external tumor was reduced considerably in size, and was low down in the pelvis, and could be felt projecting through the anterior vaginal wall. I then decided to dilate the cervix. I introduced as many tupelo tents as I could get into the cervix—at first but two of fair size—to their full length, and allowed them to remain there over night, when I removed them and introduced four more. That evening I removed them, and the cervix was dilated so that I could easily introduce my finger. As I had examined the uterus with the sound at my first visit, and it went around this mass to its full length, I supposed I had nothing but a fibroid to deal with. When I had dilated the cervix with these tupelo tents, I found I could not get at the mass of the growth, my finger going into the cavity of the uterus. At the distance of one joint and a half inside the cervix, I found a little opening, and projecting through this opening—about as large as the end of a pencil—were some of these particles of bone. Then the query arose, how was I to get into this cavity, and what was it? a double uterus, with multiple pregnancy at the last conception—one delivered and the other retained? I was at a loss to know what it was. (But finally concluded it to be an intra-mural pregnancy.) I had the particles examined under the microscope, and they showed the structure of fetal bone. Then I thought of using the tents, to increase the dilatation, but was troubled with the fear that I should have a severe septicemia come on as soon as this outside cavity was opened to air. But I was convinced that unless I tried to do something, the patient would pass out of my hands; so I decided to keep on with dilatation. On the 20th of December I began introducing the tents, and within two or three days after their removal, the cervix was again contracted so that it would not admit the finger. I introduced the tents again, and met the same difficulty in exposing the mass. The thought struck me that if I could

not get the large body out of the small opening, I could diminish the size of the mass ; so I introduced small forceps into this opening, and took it away piecemeal. All this time I had the entire uterus under my command, because it was an easy matter to bring the cervix down to the vulvar orifice. On the 24th I introduced tents and dilated it, so that I could introduce two fingers very readily, and finally got one of my fingers into the opening in which this body (indicating the specimen) was found. I then began to separate it and pull it away, getting hold of it with strong forceps. Sometimes I succeeded in bringing away a large mass of flesh, which looked exactly like that from a macerated foetus, the skin macerated and parchment-like. This was continued up to the 30th. Passing over the New Year, and allowing the patient to rest without interference, on January 9th I introduced four tupelo tents, a little longer than the ordinary, and fortunately succeeded in getting one or two into the opening in which the body was found ; so when I removed them that evening, I was enabled to bring away the entire mass and pass the finger into the cavity afterwards. It was very irregular, as though the uterine tissues had been forced into the irregularities of the foreign body. Since that time the patient has improved, the bleeding has ceased, the uterus has diminished in size, and she is up and about the house. I have had all parts of this specimen examined under the microscope. The fleshy mass shows connective tissue, muscular fibres, blood-vessels and hairs. The osseous material shows all the characteristics of foetal bone.

DISCUSSION.

THE PRESIDENT : Was there a history that would lead you to suppose, that at any time during her invalidism there was a pregnancy, or a pelvic hematocoele, or anything of that kind ?

PROFESSOR PARKES : At the time of her last pregnancy, she was very large and yet was delivered of a child that weighed but six pounds. Her abdomen was very large for some time after the delivery of this child. Again, there is a history several years back, of a period when menstruation ceased, and she supposed she was pregnant, but nothing came of it.

PROESSOR W. W. JAGGARD said the interesting specimen presented by Professor Parkes was a typical lithopædion—calcareous capsule, containing the foetal structures infiltrated with lime salts.

He thought the diagnosis of interstitial pregnancy highly probable. It was impossible to make a positive diagnosis without a post-mortem examination of the maternal organs. Carl Braun (*Lehrb. d. g. Gynaek.*, 1881, p. 128) was responsible for the statement that the formation of a lithopædion occurred only in case of extra-uterine pregnancy. Spiegelberg (*Lehrb. d. Geburtshülfe*, 1882, p. 342) however, indicates that this proposition is too general. The formation of a *uterine lithopædion* occurs infrequently in the human female, but is not unusual in ewes. Koeberle (*Gaz. hebdom.* No. 34, 1866) extracted by abdominal section a lithopædion from the rudimentary horn of a *uterus bicornis*.

The formation of a lithopædion, therefore, was not a reliable sign in the differential diagnosis between uterine and extra-uterine pregnancy.

II.—DR. JOHN BARTLETT read a paper, entitled,
A Case of Obstetrics, with Remarks.

Recently I was requested to assist a younger physician in a case of midwifery. Dr. H. had been called some hours before my coming. He found a healthy, well-built woman in labor with her eighth child. Hitherto she had had no difficulty in her confinements. She had been in labor some hours, and, although the pains were very strong, the os fully dilated, and the head presenting, no progress had been made. A midwife had been in attendance. The Doctor attempted to use Elliot's forceps, but, because of the high and abnormal position of the head above the pelvic brim, he had desisted from his purpose. Upon examination, I found the os widely dilated, the crown of the head presenting. By introducing the hand into the vagina, my fingers, directed toward the left sacro-iliac synchondrosis, encountered and passed slightly beyond an extremity of the head-ovoid which I supposed to be the occipital protuberance, but near it was so distinct a fontanelle as to lead me to examine the opposite extremity of the head. Passing the hand deeply behind the left foramen ovale and well above the pubes, the fingers embraced the occiput; sweeping well backward again over the side of the head they traversed the tempo-

ral region till the ear was reached and carefully outlined. Still farther backward the fingers passed over the frontal eminences, which had at first been mistaken for the occipital protuberance. The head was floating above the pelvic brim; the frontal region sinking somewhat below the plane of the superior strait. The crown of the head rested gently upon the pubes, while the occiput rested so far forward over the pubic bones as to be distinctly appreciable to sight and touch from without. Having determined the position of the head, I proceeded to inquire the cause of its detention; for it did not impinge with force upon any portion of the circumference of the brim. Passing the fingers along the side of the head I felt for the cord around the neck. A coil of cord was immediately encountered and pressing a little farther upward a second, third and fourth coil were detected. I felt authorized to announce to Dr. H., as the cause of the dystocia, the suspension of the head above the brim by the cord shortened by four coils about the neck. The fingers were passed about the occiput and it was pressed downward and backward, throwing the forehead backward and upward above the brim, and bringing the occiput slightly into the pelvis, the pains meanwhile having a decided effect in assisting the manœuvre. I now intended to seize the occiput with the vectis, and so deliver. Upon trial with the fingers, however, I appreciated that, as the occiput had descended into the pelvis, the forehead had risen above it, so that the power of the vectis as a tractor would not be available, seeing that the forehead, the opposite end of the lever I proposed to move, was not fixed but floating, the fœtus yet resting with the equators of the head well above the brim. As a lever to keep the occiput in proper relation to the inlet, the "Roonhuysen" would have served admirably; but in order to make available traction upon the head it would be necessary to lay hold of it with the forceps.

Accordingly, with very little trouble, though locking was effected within the vagina, the head was seized with a well-curved Simpson's forceps, and readily brought down. The expectation was, as soon as the head was delivered, to place quickly two clamp forceps on the cord and cut it between these, in order to escape the embarrassment which the several coils about the neck might occasion. The first loop however, was easily drawn over the head, the other coils were then readily released. The child which weighed 11 pounds breathed at once, seeming but little affected by the unnatural position of the funis. The length of the cord was 46 inches.

It may be considered what other line of practice might have been pursued. It might have been practicable to disengage the cord from the neck and in this way remove the cause of the dystocia. To this practice was the serious objection that with the head floating above the brim, the liberation of such a length of cord so near the pelvic inlet, might have led to its prolapse.

"The question as to the shortness of the cords being a cause of dystocia," says Joulin, "has passed through a variety of phases before our day". "Accepted by all accoucheurs from Mauriceau to Baudelocque as quite a frequent obstacle to the termination of labor, it was first rejected almost entirely by Baudelocque; and Gardien, still more radical, did not admit it at all. Lachappelle and Duges were but little disposed to consider it as a cause. Finally Desormeaux, Maygrier, Velpeau and Moreau, while they admit shortness of the cord as a cause of dystocia regard it as very rare; and this view is generally accepted to day." Some of the recent standard writers omit to mention a shortened cord as a cause of difficult labor. Spiegelberg states that too short a cord can only interfere with the advance of the child in the lower part of the parturient canal. Cazeaux, on the contrary, says that a shortening of the cord may retard the progress of the head at the superior strait. He writes: "We have met with a case in which unusual shortness of the cord, which was only nine inches in length, certainly detained the head above the superior strait for fifteen hours after the rupture of the ovum, and the entire dilatation of the os uteri." Among more recent writers, Lusk has a chapter on shortness of the cord. He reports the case of a neglected primipara, whom he assisted with the forceps after she had been in ineffectual labor for five days. "Her temperature was 103.5° F. she was in great agony. The external organs were inflamed. She died on the fifth day, the external genitals becoming gangrenous. The cord, tense and coiled a number of times around the neck, was the cause of the delay."

I cite two cases of dystocia from the cord encircling the neck. The first from that worthy man-midwife, Guillaume de la Motte, showing to what heroic expedients resort was had in these cases before the forceps came into use. The other case, from Smellie, is so similar in method of diagnosis and treatment to the one just reported, that it can hardly fail to interest.

LaMotte writes: "A young woman of this town, big with her first child, who had been very healthy during her preg-

nancy, found herself attacked with slight pains, that soon became very sharp and pressing. I was called to her in a hurry on the thirteenth of November 1697. I found the waters come away, and the child well situated. As the pains were brisk and frequent I thought the work would soon be over, but though the child kept moving continuously, was well situated, and far advanced, it remained six hours at the crowning. I was well assured that nothing but the cord could keep it there so long, when the pains were so excessive, but I saw no way to help her, there being no room to pass the fingers nor even the nail, between the head and bottom of the vagina, except toward the lower part where I slipped my finger dipped in oil as far as the chin, which I brought forward little by little, and then the head also; and kept pushing on my finger notwithstanding the sharpness of the pains. I reached at last the neck which I found entangled with the cord. I introduced my finger between them and slid the scissors upon it, with the button end toward the neck, and cut the cord through; the child came out immediately, asphyxiated but living; it kept groaning for two hours, and then did very well, except that it remained dumb. Whether there was anything displaced in the organs of speech, or the recurrent nerve obstructed, I know not. The cord had three turns; I cut only the last, which was that next to the placenta."

"In June, 1751," says Smellie, "I was called by a midwife to a woman who had been many hours in labor and found that after the discharge of the waters, the head was forced low down by every pain, but afterwards drawn up again. I was likewise informed that formerly she used to have large children and quick labors.

"Encouraged by this intimation, I tried to turn the child, but was prevented by the strong contraction of the uterus; but in making this trial, and raising the head I not only found the funis surrounding the neck, but likewise the uterus contracted before the shoulders. This last I dilated with my fingers as much as possible, then withdrawing my hand, applied the forceps and delivered the child, which had been dead for some days. The funis was three times around its neck being much tumefied and of a livid color."

In connection with the case reported by myself, I propose to make some comments upon the mode of determining the position of the head in labor. From time immemorial, it has been the custom of teachers to describe with particularity how

the position of the head may be determined by the tips of the fingers by means of the sutures and fontanelles.

Whatever skill or tact others may be endowed with, or may have acquired in such methods, for myself I wish emphatically to declare that such examinations are often entirely insufficient to furnish me with the desired information; and that now, after years of careful observation, I am not unfrequently at a loss to determine the position of the head after the usual examination *per vaginam*, and that I am occasionally led into an error in this regard only to be dissipated by the birth of the head. Nor am I alone in this want of capacity; a number of experienced obstetricians, with whom I have conversed on this subject, have expressed like uncertainty in determining the position of the head by the means mentioned.

The veteran John S. Clark, the most experienced practitioner in obstetrics that I have ever met, has on several occasions denounced the directions above referred to and so often repeated in the text-books as a delusion and a snare. The late Dr. Grosbeck, after fifty years of obstetrical practice, declared that he never could rely upon determining the position of the head by the methods under consideration. And the painstaking, accurate and deliberate surgeon, Dr. R. G. Bogue, does not boast of much better success. One of the most learned obstetricians in this city, an able lecturer on midwifery, once assured me that while he repeated fluently enough to his classes the stereotyped methods of determining the position of the head by the fontanelles and sutures, he often found, as the head passed the vulva, that the "data" furnished by the tips of the fingers had led him into gross error. While, in many cases the position of the head may be easily and certainly recognized by the ordinary methods, it is yet certain that in other instances, more especially when difficulties make a knowledge of the head's position particularly desirable, nothing positive as to its attitude can be made out by the average practitioner, by feeling in the usual way for sutures and fontanelles.

Nor is this appreciation of the difficulty of determining the head's situation new. That admirable obstetrician, William Smellie, who was one of the first to appreciate the desirability of knowing the head's position, and who perhaps earlier than any other accoucheur taught how such knowledge could be acquired, was often foiled in his efforts to ascertain the head's true situation. He writes in his "Observations" as follows: "The head though low down was so swelled that I could not distinguish its position, for I could feel neither suture, ear, nor

back part of the head." And in another place he writes, "I could not in any way, by the sutures or otherwise, distinguish the right situation of the head. I introduced the forceps at random by the sides of the pelvis." And again, "The head was so large and compressed into such a lengthened form that I could not push up my finger at the pubes to feel the ear or neck; neither could I distinguish the situation of the head by the sutures, because the scalp was so swelled; nor could I move the head upwards in order to feel the upper parts, such as the ear, neck or face." And also, "I felt something like the vertex down at the lower part of the pelvis, but we were all mistaken as to the position of the head. I thought the forehead toward the sacrum. I mistook the posterior for the anterior fontanelle. I was surprised to see the (supposed) occiput come along under the pubes, not with hair, but bald and smooth. We had all been mistaken as to the position."

How then in cases requiring a knowledge of the head's position is such information to be obtained? I know no better way of answering this question than by making reference to the practice of Smellie. Please to note the thorough methods by which he satisfied himself of the size or position of the head in the several cases here cited. "I knew the child was small because I passed my finger all around the head." And, "I perceived that the head was not large, because I could easily introduce my finger all around the lower part of it." Desiring to ascertain the position he says, "I scooped up the head above the brim of the pelvis, and as I slipped my hand flattened between the sacrum and the child's head, I felt with my fingers the back part of the neck" (determining the position of the occiput). And again, "I turned the back of my hand down towards the sacrum and raised or scooped the head gently to the upper part of the pelvis; and now with my fingers I felt the posterior part of the neck, and distinguished that the pelvis was not distorted. Thus informed, I introduced the blade of the forceps," etc. In reference to another case he says, "Being foiled in delivering the head, which was not large, after having properly applied the forceps I disengaged the instrument, and raising the head again (out of the pelvis) and found the difficulty was owing to the left shoulder being over the pubes. I got hold of the arm, brought it down, and again fixed the forceps and delivered, pulling gently at the hand."

From these extracts it will be seen that Dr. Smellie did not content himself with vaguely touching such portions of the presenting part as might be reached by the introduction of one

or two fingers, but that he introduced deeply the half hand, or the whole hand, and passed the fingers into every available space; not hesitating, when necessary and practicable, to lift the head above the brim that he might get his fingers about its salient points as the ear, the face, the back of the neck. It is noteworthy that it is only when circumstances prevent the head being thus "traced," that Smellie recommends that "the observation" be taken from the fontanelles and sutures. In the case which is the basis of this paper, the vaginal examination was made after Smellie's method. The steps of the procedure have been given in detail with the purpose of illustrating his teachings.

DISCUSSION.

DR. PHILIP ADOLPHUS: The diagnosis of the position of the child in head presentations by means of sutures and fontanelles is not as difficult to the physician who has been in attendance during a case of labor as has been stated this evening. The gradual descent of the head into the pelvis will permit the recognition of the landmarks by *repeated* examination with the finger.

In diagnostic obstetric investigations, palpation of the abdomen, the examination of the child's head and the pelvis of the mother by bi-manual palpation, should be conducted on the same principles as in gynæcological cases. An empty bladder is also essential to a successful diagnosis.

Such an examination will insure the recognition of the position of the child's head, and other necessary information.

The consulting physician, who encounters a tender abdomen, tumified soft parts and a swelled scalp in an exhausted patient, has a far more difficult task. The same rules, together with the introduction of the hand as far up as is required, under anæsthesia, will give him the necessary information.

The experience of the eminent writer of this paper, as well as that of others, shows plainly that a refinement of diagnosis is not absolutely essential. Many cases of labor are completed, in which the diagnosis of the position of the head has not been ascertained by its sutures and fontanelles. Moreover, cases which require delivery by forceps are frequently skillfully handled when the operator has not been enabled to ascertain the position of the head. We explain this by stating that the mechanical adaptation of the child's head to the bones of the pelvis is perfect; sooner or later the child's head, if

not disproportionate in size to the pelvis, will accommodate itself to its configuration, provided other obstacles in its path have been removed by the attendant. We state, also, that the position of the head does not determine the position of the blades of the forceps, but the position of the blades is always determined by the anatomy of the mother. Therefore, the forceps should be applied along the sides of the pelvis, and its pelvic curves should correspond to the curved axis of the pelvis.

Its introduction is governed by the direction of the obstetric canal, the globular head of the child, and the cranial and pelvic curves of the instrument. The direction of the obstetric canal in a woman in labor is not the osseous pelvis merely, but the pelvis covered with soft parts, whose terminal outlet is not at the point of the coccyx, but at the anterior commissure of a greatly distended perineum, a distance of ten to twelve inches during labor.

The blade of a long double-curved forceps—having both the cephalic and the pelvic curves—is guided into the pelvis by the fingers, and insinuates itself between the head and the soft parts of the mother. To facilitate the introduction of the second blade the first blade is gently elevated and rotated as much in a lateral direction as possible. The same manipulation is repeated with the second blade. In many cases the elevation of the blades and their gradual rotations for the purpose of locking them, adjust the blades of the forceps to the head of the fœtus, as they have already adjusted themselves to the mother's pelvis; and now traction, some compression, and slight leverage (if necessary) complete the delivery of the child, *which will rotate spontaneously within its blades* during traction, owing to the anterior and posterior planes on either side of the cavity, and the resistance of the floor of the pelvis.

It is best that the exact position of the head should be known, but such knowledge is not essential to its safe extraction; on the contrary, it is not correct to apply the forceps to the sides of the fœtal head when its position is oblique or transverse, for if its pelvic curves are twisted, injury must be inflicted on the mother.

PROFESSOR W.W. JAGGARD: I have listened to the reading of Dr. Bartlett's scholarly paper with interest and pleasure. His allusions to the wisdom of the ancients are always timely and judicious, notwithstanding the fact that, in general, the results of modern observation and experience are entitled to a higher

degree of consideration. I hope to be pardoned for making one or two criticisms.

The diagnosis of dystocia, by reason of a short cord, is not adequately established by the clinical history of the case. The ease with which the vertex engaged, after manipulation, and descended, after application of the forceps, the absolute length of the cord, 46 inches—even with four loose coils around the neck, not relatively short—the condition of the child when born, these are facts which do not indicate that the length of the cord constituted a mechanical hindrance to the progress of labor. The author has quoted Spiegelberg, who is of the opinion that shortness of the cord constitutes a mechanical hindrance only when the presenting part reaches the lower portion of the parturient canal. The only method of determining with certainty, in the concrete case, that shortness of the cord is acting as a mechanical obstacle, consists in the introduction of the fingers, direct contact with the cord, and the detection of the abnormal tension. If the case related by Dr. Bartlett was one of dystocia, and if the "occiput projected so far forward over the pubic bones as to be distinctly appreciable to sight and touch from without," does it not seem a plausible hypothesis that the child was presenting slightly obliquely, and that the operator performed cephalic version? "The fingers were passed about the occiput and it was pressed downward and backward, throwing the forehead backward and upward above the brim, and bringing the occiput slightly into the pelvis, the pains meanwhile having a decided effect in assisting the manœuvre."

In treating of obstetrical diagnosis, in general, Dr. Bartlett does not mention the signs derived from inspection, auscultation, and particularly *abdominal palpation*. I am induced to call attention to this topic for the reason that, notwithstanding the writings of Kucher, Mundé and Richardson, the recognition of the value of abdominal palpation in obstetrical diagnosis in the best recent text-books, and the translation of Pinard's Treatise, by Dr. L. E. Neale, of Baltimore, still many practitioners affect to disregard the paramount importance of the method. Litzmann (1865), Halbertsma (1870), Winckel (1878), Credé (*Gesunde und kranke Wöchnerinnen*, Leipzig, 1886, p. 80, *et seq.*), in order to prevent the infection of parturient women in their respective lying-in hospitals, have omitted all examinations *per vaginam* for months at a time, with most gratifying results. Under these conditions, external examina-

tion has proved perfectly adequate in the diagnosis of presentation and position.

I confess to a feeling of decided surprise upon hearing that a medical man, with the average degree of tactile sensibility and even moderate experience, should necessarily have difficulty in the diagnosis of position, by indagation, in normal, vertex presentations, after engagement, before the formation of the *caput succedaneum*,—the *os externum* being dilated or dilatable, the bag of waters, intact or ruptured. I am under the impression that failure to make an accurate diagnosis, by examination *per vaginam*, under the conditions specified, is due in very many cases to inattention. It is an obstetrical maxim of importance that both fontanelles and their sutures should be felt before making a diagnosis, when vaginal touch is exclusively employed. When an extensive *caput succedaneum* has formed, or ossification of the foetal skull is advanced, or in case of subnormal tactile sensibility on the part of the accoucheur, no absolute contra-indication to the introduction of the half hand exists. In forceps cases, a correct diagnosis of the position of the vertex must be made, since that instrument ought to be applied first with reference to the pelvic walls, and then adapted to the child's head, before the exercise of its most important—and as I believe, exclusive—function of traction.

DR. EDWARD WARREN SAWYER: I wish to speak of an interesting experience which occurred to me. A gentleman who had carefully translated the book alluded to called me in consultation to assist him. He had, by means of bimanual palpation, diagnosticated a presentation of the vertex, but on my examination I found the buttocks were presenting. I think in most cases abdominal palpation is of no service whatever to the majority of practitioners. I have experienced the same difficulty that Dr. Bartlett has so graphically described in recognizing the position of the head by the introduction of the finger into the vagina. And after a long practice, so uncertain am I concerning the position that I never think of applying forceps until I have introduced enough of my hand to recognize some part of the face or head, in order to determine the exact position of the head.

DR. J. SUYDAM KNOX: In regard to making an exact diagnosis of vertex positions, I must often confess failure if I rely only on digital touch.

I have no doubt if the practitioner is called early to a case

of labor before the uterus has become contracted, and the bag of waters has been ruptured, that it is possible by abdominal palpation to make out the position of the fœtus. When, however, labor has gone on for several hours the uterus becomes irritable, contraction and retraction taken place, and the liquor amnii to some extent discharged, I am satisfied that it is often impossible to make out a diagnosis of the position of the fœtus by digital examination. Even if you can determine that the vertex is presenting, you cannot then make out the position exactly. I have no doubt that Dr. Jaggard is correct about those large obstetrical hospitals in Europe. The diagnosis is made because the patient is under observation from the time labor begins. But the busy practitioner is called after labor has progressed some hours, and the uterus is so irritable that as soon as he begins to make any abdominal examination it contracts, and it is impossible easily to make a diagnosis. I do not introduce the hand into the vagina in many cases, but when the labor is protracted, and I think the use of forceps necessary, and I cannot make out the exact position of the head, I give the patient an anæsthetic, and introduce the hand sufficiently to find out how the head lies. I cannot see how sepsis can occur by the introduction of that portion of the hand necessary to make a diagnosis, and I think the diagnosis should be made before instruments are applied. I have several times tried the oblique introduction of the long forceps, but doubt the wisdom of introducing them obliquely without reference to the shape of the mother's pelvis and attempting traction. It is much better to apply the forceps to bring down the head, with reference only to the maternal passages, and when the head has been brought through the superior strait, to unlock the forceps and allow rotation before effecting delivery. At times it is better to remove the forceps entirely, and to re-apply them after rotation has occurred.

PROFESSOR DE LASKIE MILLER: I was much interested in the very lucid paper that has been read. It is true that there were many statements that seemed strange to me. The paper was on the treatment of complications resulting from short cord, and the illustration was a case in which the cord was 46 inches long with only four coils around the neck. This should not, it seems to me, be a cause of dystocia; but admitting that it

was, we come to cases of actually short cord causing dystocia. Take a cord that measures only four inches in length, or a case of labor which has occurred in which there is no cord, of course there must be a placenta, and the fœtus is attached through this directly to the wall of the uterus. In such a case how can delivery take place without applying traction force sufficient to sever the placenta? Physiologically the contraction of the uterus, especially after dilatation is completed, is attended with a muscular retraction of the fibers of the body and fundus, which diminishes the cavity of the uterus and has the effect of severing its relation with the placenta. It is therefore possible for the placenta to be severed from its attachment to the uterus, by this retraction, and moreover there can be no injury to the uterus from the short cord if the contractions are normal, for while the organ is contracted the relation between the attachment of the cord and the uterus, or the placenta and its attachment to the fœtus, is not extended, rather shortened, so that the advance of the child can take place and delivery result.

A case is brought to my mind, which occurred in my own practice, of a primipara who was perfectly healthy, with nothing abnormal until about the time labor commenced. When I saw the patient in the first stage of labor, she remarked to me that she had felt no movement of the child for a considerable time, but this produced no impression on my mind, for it is a common thing for patients to say, and I paid no attention to it. The labor proceeded, and as the head was expelled from the vulva, I did as I always do, passed the finger instantly to the neck with the view of searching for the cord, and if it is found there, liberate it. I found two or three coils of the cord around the neck, and they were so tightly drawn that it was impossible to disengage them. In order to deliver the child readily, I severed the cord. I noticed there was no circulation, and the child was still-born, past all possibility of resuscitation, and it had been dead a long time, for I found a knot in the cord drawn so tightly that the circulation was entirely cut off. In addition to the coils around the neck the cord passed over the shoulder, under the opposite arm, around the body and under the knee, and possibly there were other coils. It appeared very much like the statue we see of Laocoön. I infer that the movements of the fœtus at the time labor commenced or shortly before had tightened the cord, causing its death. This is the only case I have met in my practice in which I could satisfactorily trace the death to the closing of

the knot. In regard to diagnosis of position, I was not aware that it is so difficult to make the diagnosis of position. I believe the practitioner should make out a diagnosis by abdominal palpation, which can be done with great facility if he is accustomed to the practice; but I also believe that the diagnosis can be made with one fontanelle and the sutures. We can certainly discriminate between the anterior and posterior fontanelles.

DR. JOHN BARTLETT: A Fellow has expressed surprise that as a means of diagnosis I have not made reference to abdominal palpation. I purposely limited my remarks to the ordinary methods of vaginal examination. I may, however, give it as my opinion that the method of determining the position of the head by abdominal palpation will probably prove available to those only who are capable of diagnosing head positions by the ordinary examinations per vaginam.

Doctors Jaggard and Miller have called in question the assigned cause of dystocia. To them it does not seem probable that the shortened cord was the cause of delay. Their objections are well taken. In this case there are two facts which give rise to the question whether the cause of the dystocia was really the shortening of the cord, the one in itself offering at first glance a sufficient cause for delayed labor, viz., that the head was projecting decidedly forward over the pubic bones; the other seeming to guarantee freedom from restraining tension on the part of the cord, namely, its unusual length; so that after the delivery of the head the funis, though shortened, was not too tense to admit of its coils being released in the usual way. It must be considered, however, in reference to the abnormal position of the head at the superior strait, that while its attitude presented an impediment to the descent of the occiput, it invited a facile descent of the forehead; and yet this descent did not occur. Besides, the head could be swayed to and fro in the median plane of the occipito-frontal diameter so easily and freely as to give the impression that it swung on a pivot at the neck. In fact, it was this sensation imparted to the hand that suggested the probable suspension of the child by the cord; and this suggestion was strengthened by the apparent absence of any natural tendency of the head to settle into the excavation, either in the first instance as a

brow and face presentation, or subsequently, as a right occipito-anterior position.

In regard to absence of great tension of the cord after the birth of the head, it is to be considered that without calling in question the possible detachment of the after-birth, surging of the coils about the neck, etc., the well-known mechanical principles by which the attached placenta in such cases in some measure keeps pace, so to speak, with the descending head, so clearly described by Dr. Miller just now, may themselves offer an answer to the objection that the cord was not found more tense after the head was delivered. No argument, however, can place the case certainly within the category of those in which dystocia is due to shortening of the cord. It will be perceived that I have regarded the case as interesting rather because of the unusual diagnosis of the malposition of the funis than as one in which this abnormality produced dystocia; and that I have availed myself of the free exploration of the presenting part by which the diagnosis was made as an opportunity to present what I regard as the more important part of this paper. I refer to my views as to the insufficiency of ordinary vaginal examinations as means of determining presentations and positions in labor. Upon the discovery of the four coils of cord about the neck, in association with other circumstances and conditions mentioned, I conceived the circling of the funis to be the cause of the dystocia, and conducted the delivery in accordance with that idea.

Criticisms upon the plan adopted should be made in this case, as in others, from the ante-partum standpoint of information. They should not be based, for instance, upon the knowledge that the cord was of very unusual length. This surplus in the cord's length threw a new and unexpected light upon the case, casting difficulties, before prominent in the foreground, into shade, and causing possibilities not before visible distinctly to appear. In this new light an opinion might be formed that the case left to nature would have terminated well, and that all interference was unnecessary. And yet I incline to the opinion that the ante-partum view of the case through the dark glass of the clinical obstetrician was the correct one.

III.—DR. JAMES H. ETHERIDGE made the following remarks upon

Antiseptic Tamponnement of the Vagina in the Treatment of Pelvic Inflammations.

What I have to present refers to tamponnement of the vagina and supporting the uterus in cases of pelvic trouble, notably of inflammation and enlargement of the uterus, and as the work has grown upon me, other complications in the way of pelvic trouble have also been treated with a result that has rather surprised me. For it I claim nothing original. A year ago last fall, I commenced the treatment of a case of general metritis and prolapsus of both ovaries with enlargement, which had brought the woman to a very low state. She had had all sorts of operations performed and advised,—repair of the neck of the uterus and the perineum for laceration,—and had been recommended to have the ovaries removed. Upon examination I found the uterus immovable. I placed the woman in the genu-pectoral position and tamponned the vagina with absorbent cotton, saturated with boro-glyceride. The vagina was douched before the tampon was reapplied, and of course everything was removed during menstruation. This was kept up for three months and she began to have less neuralgia, which had made her life miserable. I kept up the treatment three or four months longer, when there was complete mobility of the uterus, and she went out of doors and to church. The neuralgia subsided, the tenderness of the uterus and the ovaries entirely disappeared, and her condition was so much improved that it seemed to me that this was an efficient means of treating pelvic troubles. In the midst of this work I found that Dr. Englemann, of St. Louis, was utilizing the same idea. He was using medicated applications such as iodine, carbolic acid, sulphate of zinc, tannin, iodoform, etc., and he made this subject the text of his annual address to the Gynæcological Society of St. Louis. I think the gist of his paper was incorporated in the report I made to the State Medical Society last summer at Bloomington. Since then, in all sorts of cases of uterine inflammation, I have been making applications of the cotton tampon, resulting in considerable dissatisfaction with the material employed, and I have commenced the use of something else. It is a preparation of wool that is called "antiseptic wool." This wool is finely carded, free from all oil and foreign substances. A piece is cut off, of such a length as will fit

nically into the vagina, and then with the patient in the genu-pectoral position, with the perineum retracted, this is stuffed into the vagina and left there. The upper end of this tampon can be soaked in any antiseptic solution, as boro-glyceride or listerine, and with a piece of string attached to the lower end of it, the patient can remove it and douch the vagina, in readiness for the next tampon, and in this way tampon after tampon can be introduced and the uterus held up to the highest possible level, and advantage taken of the natural drainage from the uterus of the superabundant amount of blood. The inflammations of the uterus we are usually called upon to treat are not active, but chronic, and if we hold the uterus up so that it can drain itself properly through the veins, the nutritive changes which take place will be facilitated to the greatest extent. A small Sims' speculum can easily be applied without trouble to the patient, and this wool can be pushed into the vagina so that when the patient gets up she has a soft elastic cushion for the uterus to rest upon. In this way the greatest comfort is at once experienced. I have treated between twenty and thirty cases in this way. One case was a woman with a severe laceration of the neck of the uterus; the probe went into the cavity about $4\frac{1}{2}$ inches. Local treatment had been freely employed in this case. She had pain in the legs and hips and profuse menstruation, and was a total wreck when I saw her. I put her in position and applied the tampon. I found after using four or five of them the pains had nearly all disappeared. I found also that the raw edges of the torn cervix were taking on a new mucous membrane, and I had the gratification of finding, after six months, that this uterus had been reduced to its natural size. It was with difficulty the laceration could be recognized through the speculum. I have recently been called to see a woman who has inflammation of the ovary upon the right side. I found her in bed, where she had been five months continuously. Upon moving the uterus, I found there was a great deal of tenderness throughout the pelvic tissues and around the right ovary, the slightest touch producing the greatest suffering. The woman was put in the genu-pectoral position and the vagina plugged with this wool. She got out of bed the next day, and the next night went down to dinner. Now she is going all over Chicago. Before that she had been treated nine months by means of local applications, tonics, laxatives and everything of that kind.

The result of the support of the uterus and holding the ovary up has been almost marvelous. I make these state-

ments concerning this method of treatment for the purpose of calling attention to it, as I am still studying the subject. These tampons are removed after four or five days without the slightest odor upon them.

When the uterus is enlarged it becomes heavy, sinks, and presses the veins which carry the blood out of the uterus, and we have strangulation. By raising the uterus up, the blood flows freely and the nutritive changes tend always to health. One outgrowth of the use of this tampon may be that many cases of laceration of the cervix, now operated upon, may escape operation. I have been surprised to see how very nicely patients get along, even though they have extensive lacerations, under this treatment.

W. W. JAGGARD, M.D.

2330 Indiana Avenue.

CHICAGO MEDICAL SOCIETY:

Stated Meeting, January 3, 1887.—THE PRESIDENT, EDMUND J. DOERING, M.D., in the Chair.

DR. E. J. KUH read a paper on

THE ETIOLOGY AND CURE OF ASTHMA.

The work of Wilhelm Hack on the radical treatment of migraine, asthma, hay-fever and other neuroses, has received very inadequate recognition in this country. He teaches that the rhinoscope must be as indispensable an instrument for all physicians as the thermometer and stethoscope.

The value of Hack's discovery, that asthma nervosum is a reflex disease with, usually, the nose as the starting point, can best be appreciated by one who himself, for many years, struggled against the disease. If I, therefore, in the course of this paper, class myself among my own patients, I shall do so with the view of bringing the subject within closer range.

The form of asthma of which I wish to treat exclusively is asthma nervosum, or "Essentielles Asthma" of the Germans. Some persons never get beyond a slight hint of asthma. They will from time to time make a heaving, sighing motion, or complain of præcordial fullness with or without palpitation, or of sudden drowsiness, or dream heavily at night and complain of dullness, lassitude and headache in the morning. This latter condition has many gradations, the culmination of which is nightmare. We must, therefore, learn to distinguish between an incubus of gastric and of respiratory origin. Other half-asthmatics complain only of a fleeting, leaden heaviness in the limbs amounting almost to pain; the same sensation of which so many true asthmatics complain after an asthmatic night. The typical asthma nervosum is a neurosis occurring in paroxysms.

The patient may or may not feel an aura. He will generally, towards

evening, or when he lies down, or awakes in the night, begin to wheeze. This wheezing may be associated with itching in the nose, or sneezing, or coughing; the attacks last an indefinite time, and generally end with the expectoration of a transparent glassy mucus. Such patients are often free from asthma during the day. Physical and chemical irritants, such as dust, sudden changes in temperature, the inhalation of certain gases, and a long series of idiosyncrasies which we find enumerated in text-books, can induce an attack. But the recumbent position is the most uniform, exciting cause of the single paroxysms. Such patients may be free from chronic bronchitis, chronic emphysema, heart-, kidney-, intestinal- and uterine disease: hence the term "Essentielles Asthma."

It is merely an evasion to say that asthmatic paroxysms are induced by bronchial spasms, or by hyperæmia of the bronchial lining, or by the presence of Leyden's crystals, or by phrenic spasm, or by bulbar irritation, or by exudative bronchiolitis. For any one of these presumable causes would demand a first cause, in order to merit etiological dignity.

A true etiology of asthma had therefore to be discovered, and Hack did it in the following manner: He found that he could experimentally produce glottis-spasm by touching the turbinated bodies of a sensitive individual with a probe. He then reasoned as follows: A nasal mucous membrane which shows merely slight affection, and which is not deadened in its sensibility by thickening and hypertrophy, is perhaps a better surface for exciting reflexes than one which shows evident signs of disease.

He systematically examined the nose of every patient who, for whatever ailment, came within his reach. He learned to make one distinction very rapidly, namely: that what is usually termed hypertrophic nasal catarrh is a twofold condition, which produces quite opposite effects. In the anatomically true rhinitis hypertrophica the mucous membrane is really thickened, hypertrophied through chronic inflammation. Pressure with a probe meets with a certain unyielding resistance, and there is a purulent, crusty secretion. This form does *not* give rise to reflex disturbances.

But there is another form, a pseudo-hypertrophy, the importance of which it is Hack first pointed out. It is that transitory swelling of the cavernous tissue of the inferior and middle turbinated bodies, which has of late been so often described. In this form the nose may either have a very dry, itchy sensation, or show copious watery secretion. Compression with a probe gives the air-pillow reaction. Such individuals show fleeting alternate or synchronous obstruction of the nasal cavities. Often, when examining the nose of the patients, we notice sudden engorgements and collapse, so that Hack's term *erectility* is not an exaggeration. These cavernous bodies with their frequently anæmic covering form a link in certain morbid reflexes, and when this link is destroyed through operative intervention, the reflexes cease. No symptom is more frequently overlooked by patients than transitory nasal obstruction. Most patients will positively deny its existence, until it is demonstrated to them. Therefore the assur-

ance of an asthmatic that his nose has always appeared healthy is of no value.

The theory of Hack is a simple one, and although it does not cover all the ground, is a very satisfactory one. He says that the turbinated bodies become engorged through various irritants, and that this vaso-dilatatory disturbance is transmitted to the bronchial tubes in asthma. The turbinated bodies act as accumulators for reflexes, store them up, as it were, and then transmit them to other parts. A destruction of the nasal swelling removes the reflexes. The experiences of numerous writers since 1883 corroborate the correctness of Hack's discovery.

By way of illustration I could not, I believe, select a better type of asthma of long standing than that of my own person. Twenty years ago, when I was 8 years of age, I became subject to so-called colds in the head and on the chest. They increased in severity and frequency from year to year, so that my surroundings were often puzzled to find an explanation for each outbreak. Presently nightly dyspnoea began to set in, in the following manner: During the day my respiration was quite free, but as soon as my head touched the pillow, the first wheeze set in; the paroxysms were very severe. They ceased, after lasting throughout the night, in the morning, with the usual expectoration of glassy mucus

During the day there was never any difficulty, except when occasioned by laughter. Laughter would infallibly cause itching under the chin and between the scapulæ, then I would cough convulsively and the attack was upon me. But the recumbent position was the surest exciting cause. During the first years I also suffered from that form of conjunctivitis which is now known to arise from nasal disorder.

The greater part of 1870 to 1875 I spent in the Swiss mountains, where I was entirely well. During this period I developed a peculiar idiosyncrasy towards dinner. In the midst of the meal I would invariably for weeks would be seized with a convulsive cough, so severe that it threw me to the ground. Asthma was never absent in these attacks. Then, at other times, one or two or three sneezes would initiate an asthmatic attack; or sometimes, especially after traveling, I would sneeze sixty or seventy times without intermission. In those years I had the sensation as if the asthma were brought on by a swelling which seemed to begin above and behind the palate (it was associated with intense itching, which I attempted to relieve by rubbing my tongue against the hard palate), and traveled downward to the posterior pharynx, then seemed to skip the larynx and continued from the trachea downward. This phenomenon lasted a few seconds, and then the attack began. Railroad travel would invariably cause a night of asthma. One hotel, at which I was frequently obliged to stop in Germany, adjoined a stable, and was regularly the cause of some of the severest attacks.

The inhalation of Kidder's asthma pastilles—the only palliative I ever used successfully—gave me very great relief. They not only immediately

terminated an attack, but also prevented their occurrence for the next few hours.

As soon as I became acquainted with Hack's articles in the *Berliner klin. Wochenschrift*, of 1882, and with his monograph in 1883, I commenced stricter self-observation, and found the following:

As soon as I lay down, my nose would become obstructed. The occlusion corresponded to the side on which I lay. By turning over, the occluded side would open and the other close. To have any part of the nasal mucous membrane touched by a probe gave such intense pain that I could not suppress an outcry. I could bring on an attack of asthma by rubbing my *alae nasi* against the septum.

Never did I feel the slightest dyspnoea when nasal respiration was free, and never was nasal respiration obstructed but what I felt asthmatic distress.

Under these circumstances there could be no hesitation, and I had the galvano-caustic "destruction" of both inferior turbinated swellings performed. I have found the radical obliteration of the entire inferior turbinated bodies almost an impossibility. Hack demands, and my experience confirms the correctness of his view, that the radical cure of asthma demands the radical destruction of the cavernous erection.

What is it that causes nasal occlusion? I have observed myself so closely in this regard, and have so many corroborative observations of intelligent patients, that I can make these positive statements:

Firstly, the fullness of the turbinated bodies is regularly influenced by gravitation, and corresponds to the position of the head.

It is furthermore influenced by the temperature, and probably much more so by artificial warmth than by cold; an over-heated room will almost invariably cause swelling in such patients. But the most dangerous and permanent cause of nasal obstruction is the inhalation of dust.

When are we to operate on asthmatics? The more recent the asthmatic trouble and the more pronounced the nasal symptoms, the better the prognosis. When complicated with chronic bronchitis and chronic emphysema, the outlook is generally bad. A most thorough examination of heart, lungs, kidneys and intestines should precede any operative interference. In cases of cardiac and nephritic asthma with nasal complications, I have *never* cauterized. In cases of long standing, say fifteen or twenty years, in which in the first years the nasal symptoms were very pronounced, but in later years have almost or entirely disappeared, cauterization is sometimes successful, but generally is unsuccessful.

Cases in which the asthma is more or less constant and has lost its paroxysmal nature, give a doubtful prognosis. It has been a matter of experience with me, that these patients to whom the inhalation of Kidder's pastilles, or the application of cocaine to the nose (four per cent. solution on cotton), gives relief, afford a much better prognosis than others.

In asthmatics in which coughing precedes the attack and all nasal symptoms are missing, nasal cauterization will cure, if the cough is a so-called nasal cough.

There are a number of asthmatics, fortunately a minority, who seemingly offer a good prognosis, but with whom, for unknown reasons, the operation will fail. There can now be no doubt that there are other starting points for reflexes in the respiratory tract, besides the nose. The works of Trautmann and Tornwaldt have already added the vault of the pharynx to this list.

The bronchial tubes themselves can act as a starting point, as I can demonstrate on myself when I walk against a piercing wind, or inhale vapors of sulphurous acid with my nose plugged. So that, as Hack himself warningly says, we must not over estimate the applicability of his discovery.

We must accuse the nose *per exclusionem*. Examine every patient thoroughly in every direction, and examine the nose *last*, is what I should like to advise.

About the operation itself, little is to be said. It is, as far as we know, absolutely harmless. I have performed many hundred cauterizations without any noteworthy complications. I have never had any traumatic infection. I insufflate iodoform or iodol upon the wound, introduce a pledget of cotton for a few days, and keep my instruments aseptic.

The results are, on the whole, extremely gratifying. Asthma of many years' standing is sometimes broken after the very first cauterization. Almost all patients are relieved and many cured in the strict sense of the word. Some have relapses, which additional cauterization will remove. Others again may relapse with a new reflex sensitiveness in other parts.

PROFESSOR J. A. ROBISON, in opening the discussion, said: The facts, which are indeed facts, that have been related in this paper are of interest not only to the specialist but to the general practitioner. It has been a fact long known to specialists that obstruction of the passage of air through the nares will give rise to asthma, and a great number of articles have been written on this subject. It has also been demonstrated that when operations have been performed that cleared away these obstructions the relief from the asthmatic attacks was complete. This can be easily demonstrated by any physician. Cases of nasal polypus are quite frequent, and they do not always fall under the care of a specialist. The operation is generally a very simple one; almost any physician, without special training, can remove nasal polypi, and it is really wonderful to find how many cases of asthma are thus cured. As to asthma being due to other causes, he had no doubt of the truth of the observation made by the author, that is, that transitory swelling which takes place in the turbinated bodies in cases of mild irritation. He presumed we have all noticed that when we are affected with an acute coryza and go to bed at night the narium of the side on which we lie becomes obstructed, and if we turn over the other side will become obstructed. This is undoubtedly due to the force of gravitation in a great many cases where the mucous membrane is especially sensitive. There is no doubt that in a great many cases by the irritation of a probe, or the inhalation of dust, coughing can be produced resulting in asthmatic attacks.

Therefore this demonstrates that reflex irritation of the nares is one of the causes of asthma, and it points out very clearly the method of treatment which should be instituted. The author has rendered a service in showing that there are such a large number of cases in which by destroying the turbinated bodies we can prevent the occurrence of reflex asthma. It would have been an interesting question to solve whether, in the case of the author's special experience, a respirator worn over the nose so that the air could not pass through the nose unless filtered, would have been of any benefit in preventing the recurrence of the asthma.

DR. H. MARTYN SCUDDER: About five years ago, when practicing in India, where he had to ride on horseback a great deal in the sun and breathe a great deal of dust, he suffered frequently from acute attacks of coryza, accompanied occasionally by bronchitis and slight asthma. The nose was not much obstructed, and when an attack of coryza came on, fifteen minutes' sleep would often cause it to pass away. Gradually the attacks became more severe and were accompanied and followed by some obstruction. When in London more than three years ago, Doctor Mackenzie wanted to cauterize his nose, but it was before the days of cocaine, and he decidedly objected, as he thought the remedy worse than the disease. Since coming to Chicago he has been troubled less than when abroad. Quite recently he had his nose cauterized by Dr. E. Fletcher Ingals, and it has certainly relieved the trouble to a very great extent. His experience, however, was somewhat different from Doctor Kuth's, as the cauterization gave considerable trouble for a week or two. It was followed by soreness and even by slight chills, and it made him feel out of sorts for about a fortnight, but it was successful in relieving the obstruction, and he has had no more asthma or bronchitis, although once in a while he still suffers from attacks of coryza.

DR. JOSEF ZEISLER said: Professor Schnitzler, of Vienna, has published a number of cases in which decidedly polypus of the nose has caused asthma, and where by the removal of the polypus the asthma was cured. He can confirm what Doctor Kuh has said in regard to the effectiveness of the galvano-cautery. He had a case of a boy 12 years old, who had nearly all his lifetime had chronic eczema of the hands and asthma. Believing that the asthma was the casual relation to the eczema he referred the patient to Doctor Kuh for treatment of the former trouble, while he prescribed local applications for the hands. Very soon both affections were cured and have remained so for the last year.

DR. H. N. MOYER asked what the author means by the term essential asthma, whether he means reflex asthma or something different?

DOCTOR KUH, in closing the discussion, said: "By essential asthma he of course means, as he had been attempting to explain all the evening, reflex asthma; the same asthma which text-books classify as idiopathic or nervous or essential asthma. In lieu of these clouded expressions we have now, fortunately, a term by which we express an etiological meaning,

namely, nasal asthma. It teaches us again, that the term neurosis always smacks of the hypothetical; and that when we speak of any pathological condition as a neurosis, we do so in order to cover ignorance. An asthmatic individual is not necessarily a "nervous" one, although he, of course, is not blind to the fact that some unknown factor must come into play in order to affect disease through nasal reflex. In regard to Doctor Zeisler's remarks on the connection between polypi and asthma, he did not know that Schnitzler, of Vienna, had published forty cases of nasal polypus with asthma. He was greatly surprised that such a publication should have escaped his notice. He quoted Michel, of Berlin, as having reported 135 cases of polypus without asthma. There is no doubt that sometimes nasal polypi cause asthma, but as far as he is aware, only exceptionally so. Hack found that when a patient had polypus with asthma and he left the polypus untouched and cauterized only the turbinated bodies, the asthma disappeared, although the polypi remained in the nose. He thinks there can be no better evidence of the relative innocence of polypi than that experiment. He has been asked whether, if he had worn a respirator he would have been free from asthma in traveling. He found that to be the case. For when he plugged his nose with cotton while traveling he remained free from asthma. Doctor Scudder said that nasal cauterization gave him trouble for weeks. This could only have been through wound complication. An asthmatic may have very severe trouble for a week or less after cauterization, on account of the eschar.

In order to show how careful one must be in diagnosis he would like to interpolate the following description: A patient with the mildest form of asthma, namely, the occasional involuntary deep, sighing inspiration, consulted him. The examination was negative with the exception of slight tympanites (the abdomen should always be carefully examined in such cases) and slight swelling of the inferior turbinated bodies. He treated his mild constipation for weeks without any benefit to his respiratory trouble. Then he cauterized, also without effect. At last he discovered that his *ala nasi* were so pliable that when he inhaled through the nose they collapsed and occluded the nares. In regard to the claim that injections of boracic acid solution into the nose will relieve asthma, he would simply refer to the uniformly condemnatory verdict of all specialistic practitioners against the use of the nasal douche in such cases.

PROFESSOR ALBERT WING, Pathologist to Cook County Hospital, showed

A HEART WITH ATHEROMA AT THE BASE OF THE AORTA AND IN THE
MITRAL VALVE,

and a condition described by the Germans as *prior chronic endocarditis*. The last mentioned lesion manifests itself in the distribution of grayish streaks or patches on the endocardial surface, lying irregularly distributed over it. When this lesion has proceeded far enough fatty degeneration follows, shown by patches which appear slightly yellowish to the eye.

The patches upon the valves are upon the anterior segment of the mitral. They are simply interesting and would cause no symptoms whatever. He did not know that such a case has any further interest than that these things very frequently exist, and in his experience more than a majority of cases upon which autopsies are held at the County Hospital, present lesions of prior chronic endocarditis.

• PROFESSOR WING also exhibited

A LUNG ILLUSTRATING ONE OF THE POINTS OF DIFFERENTIAL DIAGNOSIS
BETWEEN A CAVITY RESULTING FROM TUBERCULOSIS AND ONE
RESULTING SIMPLY FROM DILATATION OF A BRON-
CHIAL TUBE IN BRONCHIECTASIS.

That point is the persistence of bands, or stumps of bands, of the more resisting tissues which remain, sometimes passing across the cavity. As the fibrous tissues are more resistant than the others in the lung they are last to disappear in the necrotic process. In this specimen there are a few cavities in the apex, some of them large, and the tubercular infiltration extends entirely to the base of the lower lobe of the right lung. There was extensive adhesion of the two layers of the pleura over the lung.

PROFESSOR W. T. BELFIELD asked for a repetition of the diagnosis distinction between cavities due to tuberculosis and bronchiectasis.

PROFESSOR WING said a cavity resulting from bronchiectasis has a smooth membrane, and upon washing it, no stumps of these bands can be seen upon its floor; but in a cavity resulting from tuberculosis there are always some of these stumps or bands present. Sometimes they are very short, at other times long, and at times, as in this case, they are easily seen and demonstrated.

DR. A. V. PARK read a report of

A CASE OF ANTE-PARTUM HÆMORRHAGE AT TERM; RECOVERY.

On August 5 the author was called to see Mrs. S., a well-built and intelligent American-born Irish woman. This was her ninth confinement, and she had had six miscarriages. She had received no injuries while carrying this child except running against an obstruction in the yard which gave her a slight shock. The evening previous she had had severe hemorrhage but no real labor pains. A careful examination was made and the bedding found wet with blood, but no evidences of continued uterine hemorrhage. Vaginal examination revealed a rigid undilated os high in the pelvis. At 3 o'clock examination was again made and the os found soft and the head presenting. The pains were irregular and had no effect upon the cervix. At 11 o'clock true labor pains came on; os soft and dilated, head at the brim of the pelvis, cervix rigid with each pain. The liquor amnii having all escaped with the so-called hemorrhage the expulsive efforts accomplished little. At 2:30 A.M. everything seemed favorable for an early termination of labor, but it was soon noticed that while the pains were severe they were not propulsive. The patient was restless and thirsty, and the danger of concealed ante-partum hemorrhage was realized. The only thing to be done was to deliver at once. The patient was placed

across the bed and the membranes ruptured, which was followed by a small gush of blood. Then the forceps were applied and a still-born child delivered which had probably been dead six hours. The child was given to the nurse, and with the left hand over the fundus of the uterus a gentle pressure was made. The uterus soon began to contract and expel its contents, the blood and blood-clots that were forced out filling a wash-basin. The placenta was high up and normally situated, and easily removed, when the hemorrhage ceased. Ergot was given and the patient made as comfortable as possible. The author concludes that the hæmorrhage was caused by a partial separation of the normally situated placenta, and that the head of the child acted like a ball valve, which prevented the escape of the blood externally; that a portion of the blood found its way into the amniotic cavity, which would account for the slight hæmorrhage that followed the mechanical rupture of the membranes previous to delivery. He thought that in cases of internal hæmorrhage during labor the treatment should depend upon the stage of the labor and the amount of blood lost. If the patient be in danger of sinking and the os dilatable, but the head within the uterus, delivery should be performed by turning. If the loss is moderate wait until the head descends into the cavity of the pelvis. In all cases where possible forceps should be used for immediate delivery. The child is lost in almost every case of extreme hæmorrhage.

DR. A. V. ARK reported

A CASE OF PYELITIS OF NINETEEN YEARS' DURATION, CAUSED BY A RENAL CALCULUS. RECOVERY.

The patient was 30 years old, of slight physique and nervous temperament. His sufferings were excruciating. First attack occurred when he was 11 years old, during convalescence from scarlet fever. He was an engineer, and when exposed while covered with perspiration his old trouble would inevitably follow. He had received treatment from some of the best physicians and surgeons, and had taken almost every kind of medication, but without relief. He had taken such quantities of narcotics that it required a phenomenal dose to affect him. He had never passed calculi with his urine so far as he knew, and the entire amount had been saved and examined time and again always with negative results. Morphine was given hypodermically and a careful examination made, the urine being subjected to an analysis. Then came the question, what should be done for the patient? The best surgical authorities agree that renal calculi are generally composed of uric acid or oxalate of lime. Dr. Belfield advises the injection of large quantities of alkaline water, and says that in pyelitis caused by renal calculi it affords the only hope for radical cure by medical means. Calculi have been dissolved by copious injections of simple rain-water, and the same result can be obtained by water which contains the proper ingredients to give it an alkaline reaction. On May 13 the patient was in great suffering. Morphine was administered, and a line of treatment mapped out which was followed faithfully. The patient was directed to drink Waukesha water often in large quantities, and tincture of digitalis $\frac{1}{2}$ oz., fluid

ex. hydrangea 2 oz., calisaya enough to make 4 oz. were prescribed, one teaspoonful every six hours. A milk diet and $\frac{1}{2}$ dr. Carlsbad sprudel salts in a glass of water before breakfast was advised. In order to facilitate the washing out process the system was relaxed by anodynes, and hypodermic injections of morphia and atropia were given and hot poultices applied. This treatment, with the injection of large quantities of water, was continued during the night. At 8 o'clock A. M. the patient was free from pain and had passed a large quantity of dark colored urine in which was a calculus weighing 14 grains, oval in shape, with numerous headlike elevations composed of uric acid. On analysis the calculus was found to be composed principally of oxalate of lime. The patient said that he could distinctly feel the stone when it dropped into the bladder. The treatment was continued and the kidney troubles soon ceased. It has now been seventeen months since the last attack, and he is robust and strong.

CHICAGO MEDICAL SOCIETY.

Stated Meeting January 17, 1887.—THE PRESIDENT, EDMUND J. DOERING, in the chair.

DR. LYMAN WARE read a paper entitled

A CLINICAL STUDY OF GLAUCOMA.

The author briefly referred to the history, pathology and etiology of glaucoma, and expressed his belief in the curative power of Von Graefe's operation of iridectomy. Unmistakable symptoms of glaucoma are supra-orbital and ciliary neuralgia, increased ocular tension, periodoc diminution of vision, the appearance of a halo around artificial lights, a sluggish and widely dilated pupil and a shallow anterior chamber. Although increased tension may be associated with other diseases of the eye, its presence should always lead to a critical examination. Several cases were detailed: Mrs. M., aged 50, while riding in an open street-car, contracted a severe cold, which was followed by neuralgia over both eyes. The pain was so intense that she was at times delirious. Her weight was reduced from 110 to 80 pounds. She became entirely blind. On account of the eye being small and deeply set and the anterior chamber very shallow, sclerotomy was advised and performed. This gave immediate relief, but the pain returned again in a few days. When Doctor Ware saw the case the anterior chamber was almost obliterated, the glaucomatous lens pressed the iris forward until it came in contact with the cornea. With a Von Graefe cataract knife a free sclero-corneal incision was made and a portion of the iris excised, and the lens removed from both eyes. The pain greatly subsided, but the sight was irrecoverably lost. Another case was a man $\text{at } 52$ years, who complained of having had a pain in and over the left eye for five or six months, and had seen the halo about street lights. On examination tension was found increased, vision diminished one-half. Some months later iridectomy was performed, and a solution of eserine (4 grs. to the oz.)

instilled every four hours into the other eye. Pain was at once relieved and all symptoms of glaucoma rapidly disappeared. Mrs. M., aged 45, had frequent attacks of neuralgia, and noticed defective vision in the left eye six months before coming under observation. Tension was found much increased; she had seen halo about artificial lights for eight or ten months. Distant objects could be clearly perceived by right eye. Iridectomy was performed on the left eye with a view of abating the pain and preserving the vision of the right eye. The relief from pain was great, vision of the right eye fully restored and left eye much improved.

PROFESSOR E. L. HOLMES reported

A CASE OF FOREIGN BODY IN THE ANTERIOR CHAMBER.

The case was of special interest to him on account of the difficult diagnosis and the difficulty attending the removal of the foreign body. The doubt regarding the diagnosis arose from the fact that there was a small central perforation of the cornea. Below this, and not connected with it, was a fine greyish line extending downward and inward (R. eye), apparently in the substance of the cornea, fairly into the angle of the iris and cornea. This resembled the channels left after the removal of fine slivers of grain stalk which are sometimes thrown into the cornea obliquely from threshing-machines. The patient explained the accident as follows: He was setting a machine punch so that the punch would accurately fit the die. The power was applied, when the punch did not accurately correspond to the die. At the same instant something entered the patient's eye. Patient was first seen twenty-four hours after the accident with the eye slightly red, but not painful. Atropine was prescribed and he was sent to the hospital. The next morning the pupil was round and fully dilated. The media were all clear. The doctor felt great anxiety in regard to the case, but inasmuch as during five days there were no symptoms of inflammation along the supposed track in the cornea, he finally became convinced that there was a fine splinter in the interior chamber, in close contact with the cornea.

He made quite a long incision through the lower border of the cornea, the knife touching and moving the piece of steel, and endeavored by means of a fine forceps to seize the lower part of the steel and disengage the point from the tissues at the angle of the iris and cornea by carrying the steel farther towards the pupil. This was found to be impracticable, since the lower end of the piece was firmly held by the tissues. He used all the violence considered warrantable. As the anterior chamber was without aqueous humor, there was some difficulty in further procedure without violence to the lens or iris. He consequently extended the wound in the cornea upward so the upper end would correspond with the upper end of the steel. This end was easily seized and with considerable force withdrawn. The splinter was three-sixteenths of an inch in length. Eserine at first, then atropine with antiseptic dressings were applied with great care. There was no reaction, the patient recovering perfect sight, except

as far as there was dimness from the central cicatrix in the cornea. Vision was good five weeks after the patient had returned home.

PROFESSOR HOLMES also reported

A CASE OF INTRA-OCULAR TUMOR.

This tumor, filling the sclerotic, is a sarcoma of the choroid. The patient, a man 62 years of age, had been under the observation of several specialists during the past year, but could not give me a definite expression of their opinion. When first seen, a few days ago, the cornea was perforated and presented a staphylomatous projection of the growth. For a year there has been pain and for the last six months very great pain. The tissues of the orbit around the globe were greatly swollen, but not indurated. In enucleating the eye he expected to find the sclerotic destroyed posteriorly and the orbital tissues invaded. The enucleation, however was performed as easily as in ordinary cases. The optic nerve is seen to be enlarged several millimetres behind the sclerotic. The swelling in the orbit was caused by nodules of fat filled with numerous blood-vessels. Dr. Ochsner pronounces the tumor to be a small round-celled sarcoma with very little pigment. The nodules of fat are free from sarcoma cells. This class of tumors, if removed early, are not very liable to return in the orbit. They may, however, reappear, especially in the liver or other internal organs. They must, consequently, be regarded as quite malignant.

DR. BOERNE BETTMAN read a paper on the

CONNECTION BETWEEN OCULAR AND NASAL DISEASES.

The author thought that numerous pathological conditions of the eyes and lids are attributable to abnormal changes in the nose, and that in these cases treatment of the ocular organs alone will fail to alleviate the trouble. After referring to Hack's monograph on the subject, Dr. Bettman detailed several cases in substantiation of his theory: A boy of 10 applied for treatment of epiphora of both eyes. The eyes were constantly weeping. An examination of the nose revealed an extensive swelling of the anterior portion of both turbinated bones. When these parts were touched with the probe profuse lachrymation was induced, and a light thrown into the eye by means of the ophthalmoscope produced violent sneezing. A deep incision was made in the swelling with a knife electrode, and a flat burner was also employed. The slough was completely thrown off in fourteen days and the boy cured in one month, the eyes receiving no treatment. Polypi of the nose have been found to produce secondary affections of the eye. Hermann S. was prevented from following his trade of a cabinetmaker on account of the excessive flow of tears; he also complained of pain in the eyes. Polypi were removed from the middle turbinated bone with the Jarvis snare and a cure effected. E. B., aged 16, was extremely sensitive to light, and the eyes were both bathed in tears. Each time the eyes were exposed to a glare of light she sneezed violently. There was Hack's swelling in both nostrils. Two pledgets of cotton were soaked in a 5 per cent. solution of cocaine and allowed to remain five minutes at a time. There

was an immediate effect, and in three-quarters of an hour she was able to bear the light. The patient refused cauterization and employs cocaine to avert photophobia. The majority of cases coming under Dr. Bettman's observation have been treated by applications of the galvano-cautery to the nasal mucous membrane. The applications restricted to the anterior end of the turbinated bone frequently fail to give relief. It has been found that a sensitive area exists at the posterior end of the inferior turbinated bone and also at the anterior part of the nasal cavity, in the angle forming the boundary of the vestibule. In conclusion, the author thought oculists should always subject the nose to a thorough examination when seeking the source of ocular complaints.

DR. H. M. STARKY read a paper entitled

SOME MODIFICATIONS IN THE TREATMENT OF STRICTURE OF THE NASAL DUCT.

The author said that about 1883 the Western Suppository Co. made a lachrymal bougie of medicated gelatine of such elasticity that it could easily be passed into the nasal duct. It was less painful than a metal probe, and its slow solubility kept the mucous membrane at the point of stricture distended so that it could be acted upon by the medicine from thirty to sixty minutes. He thought results showed the use of electrolysis in these cases to be often unsatisfactory. The object to be attained is to restore the diseased parts to as nearly a normal condition as possible, and the most satisfactory treatment is by using injections more and probing less frequently. The author determined to try the effect of probing the punctum without slitting the canaliculus, followed by astringent injections over the inflamed surface. This treatment proved entirely satisfactory, and in about five weeks a patient went to his home in another state with apparently perfect recovery, and no destruction of tissue.

The following case was given as illustrating the author's method of treatment: Mrs. L. suffered from lachrymation of each eye for two years. There was severe lachrymal conjunctivitis of the right eye, the punctum being contracted one-half. On dilating the right punctum a No. 2 probe could be passed without difficulty, but the whole interior of the nasal duct had the peculiar velvety feeling that is caused by thick villous mucous membrane. The same condition, in less degree, was found on the left side. Treatment was commenced by applying a weak astringent and washing out the lachrymal canals thoroughly each day with boric acid lotion, followed by a weak astringent. Once a week a probe was passed through the dilated punctum down to the naris, using a larger probe each time until No. 7 was reached. The result was satisfactory, and in six weeks the patient returned home apparently well.

PROFESSOR W. FRANKLIN COLEMAN read a paper on

SYMPATHETIC OPHTHALMIA.

Disease in the sympathetic eye generally occurs when there has been a wound or operation in the dangerous zone of the diseased eye. Becker, in 1875, collected twenty-two cases of sympathetic ophthalmia from

cataract operations, foreign bodies lodging in the eye, and degeneration of a lost eye, or other causes. Doctor Coleman read in detail the clinical history of the disease, and enumerated the causes, histories and results of the treatment of a large number of cases. In regard to treatment he advised as follows:

CONDITION DISEASED EYE.	CONDITION SYMPATHETIC EYE.	TREATMENT.
Blindness.	Normal.	Enucleation in unintelligent and children.
Blindness.	Sympathetic irritation.	Enucleate.
Blindness.	Sympathetic inflammation.	Enucleation not often advisable.
More or less vision.	Normal.	Do not enucleate generally.
More or less vision.	Sympathetic irritation.	Better enucleate.
More or less vision.	Sympathetic inflammation.	Do not enucleate.
Acute ophthalmitis.	Normal.	Never enucleate.
Acute ophthalmitis.	Sympathetic irritation.	Puncture and foment diseased eye, then enucleate.
Acute ophthalmitis.	Sympathetic ophthalmitis.	Treat ophthalmitis, and then enucleate.

PROFESSOR F. C. HOTZ said: He thinks the theory of the author in regard to the closing of Schlemm's canal and the approximation of the iris to the cornea interfering with filtration cannot account for glaucoma. Pathological anatomy has so far failed to find the cause, and we have to rely on clinical studies to build up a theory which will account not for the late stage, the fully developed glaucoma, where the sight of the eye has been permanently destroyed by the disease, and which the pathologist gets from the oculist after enucleation, but for the first stage, the premonitory symptoms before it becomes an acute attack; a stage which the pathologist has not yet investigated with his microscope. At that stage who can say certainly what glaucoma is? It is probable that various causes lead to the same result. He believes that the agglutination of the iris to the cornea, the compression of Schlemm's canal or any other part of the eye, are consequences, and are not primary causes of glaucoma. He was somewhat surprised that, in a paper addressed to general practitioners, the author attached so little importance to the clinical symptoms in glaucoma, of a general character, such as gastric and febrile disturbances in connection with hemicranic headache. These symptoms often cause the practitioner to fail to discover glaucoma. He recalled a number of such instances. Last October a lady came under his care who had been under the treatment of a physician for four or five weeks for malarial fever and dyspepsia, which was the beginning of an undoubtedly characteristic and typical attack of glaucoma. But the attending physician's attention was attracted by the coated tongue, the nausea, vomiting, severe headache and excited

pulse, and he treated the patient for these daily attacks of headache, while he diagnosticated malaria, and used antiperiodic remedies, utterly disregarding the condition of the eye, although the sight was at first nearly extinguished, and only returned to a certain extent after the attack lost somewhat its severity. Another case: A poor woman lost one eye from glaucoma ten years before; the eye was blind and hard, showing the characteristic state of an eye in which glaucoma had run its course. She was attacked by a severe pain in the head extending over the left side, could not sleep for several weeks, was nauseated, vomited, and showed symptoms of some general disturbance. The physician treated her for the stomach trouble and headache, and although she told him time and again that her sight was getting poor, and suggested that an oculist had better examine her eye, he paid no attention to this, and the result was that two months after this attack the sight was entirely gone and could not be restored. In still another case both eyes were neglected until the patient could perceive only a little flicker of light, before it was considered necessary by the attending physicians to pay any attention to the eyes. Dyspepsia, gastric fever, malaria, and sick headache were the diagnoses, and the treatment was in accordance. He thought it well to bring out these points, and to call the attention of every physician to the fact that such attacks sometimes mean something more serious than a disturbance of the stomach, and that when the patient, during such attacks, speaks of the eyes as being troublesome, or the sight as becoming dim, it is worth while to pay attention to it, and to remember that acute glaucoma is often ushered in with these general constitutional symptoms.

DR. LYMAN WARE said, he had only a word to say about the disturbance of the equilibrium of secretion and excretion. It has been fully demonstrated that it is only by restoring the equilibrium that sight is saved. He quite agrees with Doctor Hotz regarding febrile symptoms, but it is his experience that they are *secondary* rather than *primary*.

DR. HENRY GRADLE said: The cases which Dr. Bettman presented are of great interest from the fact that they have only lately been recognized. Dr. Gruening, of New York, was the first to point out that there existed affections apparently of the eye, but which in reality originated from the nose. He has watched for these cases ever since Gruening's paper first appeared, and would say that the cases in which the nasal trouble is *entirely* the cause of eye disease are not very frequent. But he had seen instances where affections of the eye were certainly complicated by nasal trouble, and the nasal trouble prolonged the eye disease. He recollected a number of cases of eye disease either kept up or originated by nasal trouble. The first of these is a pseudo-erysipelas of the lids, which is not an infectious disease, but merely a secondary affection of the blood-vessels, only resembling erysipelas clinically. It is entirely due to irritation and engorgement of the blood-vessels in the front part of the inferior turbinated bone. A second type of nasal affection giving rise to eye trouble is true periodical hay fever, and a non-periodical irritability of

the nose, resembling hay fever. He has published four cases, and has since seen another, of periodic conjunctivitis characterized by the formation of granules and follicles, which trouble always receded in winter, to reappear again in the spring and summer. In two of these cases a diagnosis of hay fever has since been made. He has seen a case which had been treated for trachoma by a number of specialists, where the history of the nose showed that the affection was of nasal origin. The same trouble may exist in a non-periodic form, and present all the symptoms of hay fever, the trouble not being limited to any season, but occurring in any part of the year, lasting a few days or weeks. But these cases are not common. In one of these cases he was able to effect a complete cure by cauterization of the nose. A third type of nasal affection giving rise to ocular symptoms is true catarrh of the upper and front part of the mucous membrane of the nose, where the membrane is distinctly reddened and where there are generally slight and by no means prominent symptoms of catarrh. In these cases he has very frequently found troublesome epiphora without any stricture of the duct; in some cases the test was made by using delicate probes. Such cases are entirely curable by simple treatment of the nose. He has found a not sharply defined case of asthenopia, due not entirely to the nose, but complicated with refractive trouble where nasal treatment was necessary to complete a cure. Once or twice he has seen polypi play the same role, and a number of times found the starting-point of the irritation not in the front of the nose, but in the posterior part, in the form of the common adenoid vegetations.

This is a subject which has not been fully dealt with in literature, but he has several cases where the extirpation of the large post nasal tonsil has given decided relief to the eye. Then he has found that in a few cases ulcers or chronic inflammation of the cornea were kept up by nasal trouble which was probably started in the first place by a copious flow of tears from the eye. He has observed that local treatment by means of calomel, atropia, and the customary applications to the eye, proved inefficient, while the addition of nasal treatment hastened the cure of some of these tedious cases. The nose was probably normal to start with, but the continued flow of tears produced either small erosions or some little catarrhal troubles of the mucous membrane at the front of the nose, subsequently increased to chronic catarrh, leading to congestive obstruction of the tear passages, or exerting an unfavorable nervous influence upon the eye trouble. Finally, as a rare instance, he mentioned one case which is now cured. The patient was sent to him for polypi, which, however, proved to be the minor trouble in the nose, the real trouble being an immense vascular tumor occupying the entire floor of the right side of the nose, covering the inferior turbinated bone and reaching about to the middle turbinated bone. The patient had been reduced in strength, and the slightest exertion on his part produced hæmorrhage, therefore the most careful operative procedure was necessary. He finally succeeded in removing the entire tumor by the galvano-cautery in twenty sittings. As the tumor

began to shrink the hæmorrhage was less, but he lost thirty or forty ounces of blood in six weeks. During the latter part of the treatment his right eye began to bulge, and he complained of double sight. It has remained healthy, but there was an unmistakable development of vascular tissue in the orbit and behind the eye, which receded by the time the tumor had been extirpated from the nose.

DR. BOERNE BETTMAN said that he was very glad to hear Dr. Gradle corroborate his statements. He is well aware that these cases are comparatively rare; although he has recorded in his case book about twenty, seen during the last two years. He is acquainted with the article published by Gruening. His attention was first called to the subject by the work of Hack, and since reading that he has made it a point never to allow an eye patient to leave his office until his nose has received a very thorough examination. He has seen a number of cases such as mentioned by Dr. Gradle, but thought it better to describe to-night only the typical ones. The connection between ocular and nasal troubles is a point all oculists should bear in mind, and when they find no local cause for epiphora they should examine the nose.

DR. A. P. GILMORE said he would like to add one word in regard to glaucoma, and that is, that the importance of tension did not seem to him to have been sufficiently dwelt upon. Any careful general practitioner can ascertain whether the tension is increased or not, simply by comparison with the tension of his own eye. All pain referred to the eyeball, with or without the accompanying neurotic symptoms mentioned in the paper, does not mean glaucoma. Unless there is increased tension you cannot diagnose glaucoma. The author does not mention Badal's operation in the treatment of glaucoma. It is certainly entitled to a place among the operative measures. He would only speak of one point in Doctor Starkey's paper, viz., epiphora. He does not believe, with many, that epiphora is due primarily to a stricture which prevents the escape through the nose of the natural amount of fluid secreted, but is due rather to reflex irritation causing an hypersecretion of tears. In health the eye is moistened with a moderate secretion. When the lachrymal gland is removed the eye continues to be moist and the cornea retains its lustre. Tears are not essential to the lubrication of the eyeball; their function is to protect the eye against foreign bodies. A bit of dust under the lids will cause profuse lachrymation and the tears will flow over the face, not because of an obstruction to the natural amount of fluid secreted through the natural passage, but because of a hypersecretion due to reflex irritation. For treatment he never uses a probe larger than Bowman's No. 6, usually No. 4. He seldom finds it necessary to make Bowman's operation in epiphora. He thinks its use is unnecessarily frequent. He uses astringent and antiseptic solutions with a syringe small enough to be easily introduced into the puncture when slightly dilated. He is very careful to treat any nasal complications; it is impossible to treat diseases of the eye successfully without recognizing and treating reflex irritations of the nose.

DOCTOR STARKEY said that his paper was necessarily cut down very much. As first written he had given some space and attention to cases similar to those mentioned by Dr. Bettman. He had also spoken of the probability that in many cases of epiphora, where there had been inflammation of the tissues lining the lachrymal canals with partial closure, a continual irritation of the canal in some way, perhaps reflexly, so stimulates the lachrymal gland that the tears are poured forth more abundantly. There are well-known cases where the lachrymal canals have been completely closed by injury or operation, and yet lachrymation is not annoying, although the gland has not been extirpated; tending to show, as mentioned by Doctor Gilmore, that the normal secretion of tears is ordinarily very limited. It seems to him that in many instances lachrymation is due to irritation propagated reflexly, and therefore in treating such cases he thought of trying to restore the mucous membrane of the lachrymal canals to the normal condition, as well as to look for and treat points of irritation elsewhere.

PROF. J. E. COLBURN said: In case of injury where there is danger of sympathetic irritation, a foreign body being lodged in the anterior chamber, iris, ciliary body, or the choroid, where the chances are that in order to give all the advantages of treatment the patient must necessarily be idle for a considerable length of time, and where the sight in the injured eye has been irretrievably lost, he thinks it advisable to make the operation of evisceration or abscission as early as possible. The patient, if a laboring man, is then relieved from a long enforced idleness and anxiety, and the danger that lack of care frequently causes in this class of cases. Where the appearance is first to be considered, and the patient can be constantly under observation, the operation can be postponed, but with the strict injunction the patient is to be under constant surveillance. In a large majority of cases where there is great damage done and the foreign body is out of sight, it is safe and advisable to make the operation, trusting to that to save the other eye. In a case that came under his observation recently a piece of steel entered the anterior chamber near the centre of the cornea, passed through the iris and lodged in the sclera. No operation was performed, and the fellow eye became sympathetically affected, and on account of its sympathetic disturbance had to be removed. The steel produced some local irritation, and the eye was caught and rolled strongly toward the nasal canthus, and the piece of steel was found projecting into the orbit from the sclera and was removed. The track of the steel through the sclera was surrounded by a large mass of fatty degeneration, which was also removed. Vision remained about one half.

PROF. W. FRANKLIN COLEMAN said he agreed with Doctor Colburn as to the desirability of timely enucleation in the case of a laboring man to save his time, but should ophthalmitis set in he should not, under any circumstances, enucleate the eye. He believed it is rare for German operators to risk removing an eye in a case of ophthalmitis, but in England they scarcely hesitate to remove an eye under any circumstances. He had never regretted recommending a patient to have an eye enucleated, but he sometimes

regretted that he did not urge the patient to have the eye out in order to avoid the fearful risk of sympathetic inflammation. He is astounded at the position of so eminent an authority as Noyes who says, "I hesitate to enucleate the eye on account of appearance, and do not do so unless symptoms of irritation or inflammation appear which I cannot relieve with medical treatment." In nineteen out of twenty cases the lost eye is not worth saving, but is a blemish, and an artificial eye would be more ornamental. And if a man wishes to get work he will deceive the very elect as to which is the real and which the artificial eye. He cannot see any advantage in not advising enucleation where the eye has been injured to such an extent as to menace the fellow eye.

PROF. GILMORE asked Prof. Holmes why he did not try a magnet.

PROF. HOLMES replied that he had been in so much doubt what to do that he thought best to first try incision and forceps. He did not believe the best magnet could have liberated the end of the steel, buried in the tissues of Fontana's space. It is remarkable that so long a piece of metal could have been thrown through the cornea, making so minute an opening, and lodged in the anterior chamber, as described, without injury to the iris or lens.

PROF. COLEMAN said to his mind the magnet in the eye is a delusion and a snare. For instance, if you introduce a magnet within the eye not knowing where the foreign body is before placing the point of your magnet, you have to search the whole cavity of the eyeball and reduce it to a jelly before you can extract the body. Granted no great harm is done if you do not extract it with the magnet, for you can afterwards enucleate the eye. But so far as he has tried it, and has seen others experiment with the magnet, it does not give satisfaction.

PROF. HOLMES replied: That is very true in many cases where the steel cannot be seen with the ophthalmoscope, but he thinks where a view of the foreign body can be obtained early, the magnet may be employed with brilliant results. There are now so many cases reported with excellent results after extraction with the magnet, that he cannot think it a delusion and a snare by any means.

PROF. COLBURN said he recently saw an interesting case in which the foreign body was lodged about half way between the ciliary body and the entrance to the optic nerve. The operator cut through the sclera about where he thought it was lodged, passed the magnet in and brought out the foreign body apparently without wounding the retina at the point of attachment. The patient made a good recovery.

CHICAGO MEDICAL SOCIETY.

Stated Meeting, February 7, 1887.—THE PRESIDENT, EDMUND J. DOERING, M.D., in the chair.

PROFESSOR W. E. QUINE, Chairman of the Committee appointed to convey to N. S. Davis, M.D., LL.D., a formal expression of the Society's

estimate of his labors and character, prefaced the presentation of the report by a few well chosen words of congratulation to Prof. Davis on his arrival at the fiftieth anniversary of the date on which he received his diploma to practice medicine. The report of the committee, which had been engrossed on parchment, was then read and presented to Doctor Davis, who responded in a feeling manner. The resolutions were as follows:

"*Resolved*—1. That N. S. Davis, M.D., LL.D., ex-President and only surviving charter member of this organization; ex-President of the Illinois State Medical Society; twice President of the American Medical Association; President of the Ninth International Medical Congress; Dean of the Faculty of the Chicago Medical College, etc., etc., is the acknowledged founder of the American Medical Association, and practically the founder of all medical organizations on this continent. His labors in this direction have been of incalculable benefit to his profession and the community at large.

"2. That he has been one of the most earnest and influential workers of his time in the direction of improving the methods, increasing the thoroughness, and enlarging the scope of instruction in the medical colleges of this country, and has thus contributed vastly to the elevation of the average scholarship of his profession.

"3. That he has been one of the most devoted and eminent of the medical teachers this country has produced; one of the most industrious and powerful of the medical writers and orators; one of the most active and conscientious of the original investigators; and one of the most acute and philanthropic of the medical practitioners. He has received and merited the highest honors which the medical profession had the power to confer, and he has been outranked by no man in point of popular confidence and esteem.

"4. That as a man he has made an inspiring record—a record of purity and dignity of character; of unyielding devotion to principle; of tireless zeal for the suppression of intemperance, and of such charity as made him pre-eminently the physician and benefactor of the poor, and led him habitually to subordinate opportunities for personal gain to impulses in the direction of making his fellow creatures happier and more useful. A born teacher of teachers! leader of leaders! exemplar of christian philanthropists! the Chicago Medical Society hails thee as the most illustrious of its members, and salutes thee as an honor to the profession and a blessing to thy race."

Signed by President E. J. Döring; Liston H. Montgomery, Secretary, and Dr. J. J. Angear, William E. Quine and James H. Ethridge, Committee.

PROFESSOR J. A. ROBISON read a paper on

THE CLIMATIC TREATMENT OF DISEASE,

which was discussed at the meeting of the society on February 21st.

He said there is probably no field in therapeutics in which the general practitioner becomes so quickly lost as that of the climatic treatment of disease. He seldom has the time or opportunities to investigate the subject personally, and what little knowledge of the subject he possesses has been gleaned from the voluminous literature written by various authors on this topic. Even this knowledge is ill-defined. There is a great difference of opinion among writers on climatology as to what should be the altitude, temperature, dryness or moisture, etc., for the treatment of various pulmonary diseases. The purpose of this and following papers will be to formulate the desiderata for climates in the treatment of various pulmonary diseases.

Inasmuch as phthisis pulmonalis constitutes the largest class of these diseases, he noted what some eminent authorities say are the requisites in the climatic treatment of this disease.

From the opinions of these authorities we can tabulate certain facts :

1. The climate must be such as to insure *pure air free from dust, or poisonous germs.*
2. Such air is more apt to be found at an elevation of 1,000 feet, or more, above the sea level.
3. There should be an equable temperature, neither too warm nor too cold; the air should be in continuous motion and yet there should be no wind storms.
4. There should be plenty of sunshine.
5. The landscape should be pleasing.
6. The health resort should be easily accessible and home comforts with congenial society easily obtained.
7. The patient should be able to take almost daily outdoor exercise without fatigue.

When patients are able to find homes in climates which nearly fulfill all these conditions, clinical observations demonstrate that consumption may not only often be arrested but cured. It is a well-known fact in mycology that a modification of the environment often prevents bacteria from thriving and multiplying, and this may account for the improvement which often follows the residence of a consumptive in a pure climate where he can take exercise. Bodily nutrition is increased, the power of resistance to disease is augmented, and the germs of consumption die. The disappearance of the disease is heralded by the improvement of the appetite and the digestion, the increase in force of the circulation, the stimulation of the respiratory functions with increase of normal oxidation and bodily heat. Thus with the improvement of the general bodily nutrition is favored that condition of the lung where there is absorption of the inflammatory exudates present in incipient phthisis, or the formation of cicatrized tissue in the latter stages of the disease.

Having thus considered the climate conditions favorable for the treatment of consumption, he noted the claims which certain localities in the United States present as being suitable places to which to send consumptive patients, including Asheville, N. C., Marietta, Ga., and Lookout Mountain, Tennessee.

PROFESSOR F. E. WAXHAM exhibited

MODIFIED INTUBATION INSTRUMENTS.

DR. WAXHAM said: About thirty years ago a new operation was proposed as a substitute for tracheotomy, by M. Bouchut, of France, and so great was the opposition to this new operation, which was styled tubage of the larynx, that a committee headed by Trousseau, appointed by the Academy of Medicine, reported adversely in regard to it, and the operation was so deeply buried in oblivion, that early operators in this country were not even aware of the attempts and failure of Bouchut.

The most earnest advocates of intubation do not consider that the instruments are perfect; indeed the operation is yet in its early infancy, and it may be years before the method is fully and perfectly developed. One of the chief objections to the operation, indeed the only valid objection, is the difficulty of swallowing, the danger caused by the falling of food and fluid into the bronchial tubes through the canula, and the too frequent occurrence of broncho-pneumonia. He would not exaggerate this danger, but certainly it is true that many patients die of broncho-pneumonia from this source. To overcome this difficulty he had had Messrs. Charles Truax & Co., of this city, modify the O'Dwyer tubes, by making them with smaller heads.



Cut No. 1—O'Dwyer Tube.



Cut No. 2—Waxham's Modified Tube.

The tube is prevented from slipping into the trachea, by a rubber collar. (Cut No. 3.) To this rubber collar is attached a flap, or artificial



Cut No. 3.

epiglottis. (Cut No. 4). During the act of deglutition the larynx rises



Cut No. 4.

and presses against the base of the tongue and the epiglottis, and the pressure of the epiglottis holds the rubber cap, or artificial epiglottis, over the aperture of the tube, thus preventing the dropping of solids into it, and as deglutition ceases, the larynx falls and the elasticity of the rubber throws it upwards. This rubber attachment does not entirely prevent the falling of liquids, of water particularly, into the tube, but it is of very great assistance in swallowing solids and semi-solids. He has used this modification in a number of cases with good results, and he had, at that time, a little patient convalescing from a desperate attack of diphtheritic croup, in which this modification was used.

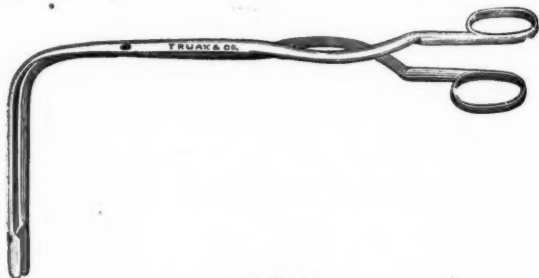
He also presented a modification of the mouth-gag. (Cut No. 5.) In



Cut No. 5.

the old gag the extremities are liable to strike the shoulder, especially if the child is not held well and is allowed to slip down in the lap of the attendant, the extremity of the gag striking the shoulder and throwing it out of the mouth. The modified gag passes back of the head, and we avoid the danger of the gag being displaced by pressure of the shoulder. This gag was first suggested by Dr. McWilliams, of this city, and has been in the market for several months. There is still another danger that may follow the introduction of the tube, and that is the detachment of membrane below the tube, or the pushing of membrane down ahead of the tube when it is introduced. An accident of this nature had occurred to him recently: a tube was passed down into the larynx and the respiration at once ceased, the child turned blue and seemed upon the point of death. The tube was at once removed, but the respiration was only slightly improved and the tube was again introduced, with the same result. It was again removed and the trachea forceps (cut No. 6) that he had devised for this purpose, was introduced into the mouth, and a mass of membrane, a perfect cast of the trachea and the two larger bronchial tubes, removed. After the removal of this cast the tube was again introduced, and respira-

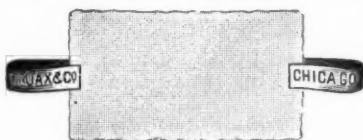
tion was easy. Without these forceps an immediate tracheotomy would have been necessary.



Cut No. 6.

He then presented to the Society a membranous cast from the trachea, larynx and bronchial tubes of the late Dr. Newton; the specimen being remarkable not only for its thickness and its extent, but for the rapidity of its growth; it was produced within three or four days after the invasion of the larynx. The fate of Dr. Newton, whose early death all regret most sincerely, teaches a sad lesson: it teaches the danger that besets the faithful physician, and the necessity of taking every possible precaution against the contraction of this hydra-headed monster, this justly dreaded disease diphtheria.

To those practicing intubation he advised that an ordinary rubber cot with the end cut off should be slipped over the forefinger, and then during the operation, if the gag is displaced, the finger is protected; as an additional protection, it will be well for the operator to use a respirator, (cut No. 7) an ordinary pad of antiseptic gauze with tape attached to



Cut No. 7.

secure it in place. This pad should be passed over the mouth and nostrils, and should be used by the physician when inspecting the throat or when operating upon a bad diphtheritic case. He regards it as a duty that every physician owes to himself, his family and friends, to take these precautions, especially in the treatment of bad diphtheritic cases.

PROFESSOR JOHN BARTLETT said: Doctor Waxham has given us the position of the O'Dwyer tube when *in situ*, indicating that the beveled facet on its upper extremity should present upwards and forwards. By several practitioners in this city the tube has been introduced contrariwise; that is with the bevel of the flange looking upwards and forwards. This position

of the tube, it is maintained by those who prefer it, has an advantage, namely, that when it is so placed, the patient's ability to swallow is appreciably greater than when it is inserted as intended by Doctor O'Dwyer. The anatomist, Professor Hoadley, prefers this reversed position. He has now introduced the tube in this manner in eight cases, and in seven of these the patients, directly after the operation, could swallow fluids without the least difficulty. Doctor Hoadley maintains that the flange of the tube as placed by him deeply within the vestibule of the larynx, in no wise interferes with the functions of the epiglottis, or the aryepiglottic folds. Confusion in regard to the proper position of the tube, has arisen here from earlier cuts of the instruments accompanying some of the cases; these erroneously represented the tube placed with its longer margin forward. He desired to say a few words in regard to feeding these patients. There are reasons for believing, that, by the use of a French conde catheter of proper size and introduced some distance into the gullet through the nasal cavity, thorough alimentation could be secured without distressing the child, or, a suitable stomach tube might be introduced through a stomach-tube director without greatly distressing the patient. Stress might be properly laid upon the fact that pultaceous food, as bread soaked in milk, is swallowed more readily than water, or fluid nutriment.

PROFESSOR CHARLES WARRINGTON EARLE said, he thought Doctor Waxham, who is certainly the most successful in this operation, should warn the general practitioner who has had little experience against trying this operation without some one standing at his elbow to show him just how to perform it. There are few who do it well, and he knew of excellent surgeons in this city who may be trusted in everything else, but who have tried to do this operation and signally failed. And, although Doctor Waxham talks as if it is very easy, no person should try the operation for the first time without having some one by him who is particularly skilled. He remembered very well trying to perform the operation when Professor Waxham was present. He tried to introduce the tube but could not, and Doctor Waxham took the instrument and did it in two seconds. He thought one should not try to make it appear so easy.

PROFESSOR WAXHAM, in closing the discussion, said: He would say a few words in regard to feeding patients. One of the secrets of success is proper feeding, and the attending physician should superintend the feeding of the child. He may tell the people to feed it *bread* and milk, or semi-solids, and if he investigates the matter he will find they are giving it half a teaspoon of milk with a little bread, and the milk trickles into the trachea and the bread is rejected. If they are told to make a custard they make it so soft and fluid that it will *trickle* into the trachea. It is very important that the physician should superintend the feeding, personally. It is well not to give the child liquids; a small piece of ice placed in a piece of cloth held in the mouth will quench the thirst, and it should not be allowed to swallow for several hours, when it will swallow very much better than if the feeding is attempted at once. He had always made it a

practice to introduce the tube with the beveled portion directed forwards and the projecting shoulder backwards, and regarded that as being one reason of his success. It seems a reasonable method of placing the tube because, if the higher portion is directed backwards the epiglottis can more perfectly close over the aperture of the tube than if the high portion is introduced forwards. Little or no difficulty is ordinarily experienced by the expert in removing the tube. It has been removed over and over again in two seconds; and yet, occasionally, if the tube becomes turned in the larynx, or if from the small size of the tube it sinks to the bottom of the larynx, it becomes difficult even for the expert to extract the tube, and in such a case after two or three careful attempts, we should give the child an anæsthetic so as to have it entirely quiet while the extractor is passed into the tube. In extracting the tube it is best to place the finger over the base of the tongue, when the child will gag and the tube will rise to the finger and it can be caught with the extractor.

ANNUAL REPORT OF THE MUSEUM OF HYGIENE.

ANNUAL REPORT OF THE MUSEUM OF HYGIENE OF THE UNITED STATES NAVY. *By* THOMAS J. TURNER, *A.M., M.D., Ph.D., Medical Director, U. S. N., in charge.*

In presenting this report upon the Museum of Hygiene, it is to be stated that the remarks of my predecessor, Medical Director John M. Browne, U. S. N., as to the necessities of the museum, apply with increased force.

Since the last report the collection of sanitary and hygienic appliances has been increased by donation and purchase until there is now insufficient room for the proper presentation of the general exhibit, either for purposes of study or inspection. The like remarks apply to the library. The shelving is now full, and the constant addition of books, pamphlets, circulars, etc., upon hygiene, both general and special, has rendered it necessary to store these accessions upon the floor space. The library, from this fact alone, is becoming valueless for reference and study, and its usefulness is consequently impaired. The catalogue, still incomplete, now numbers over fourteen thousand titles. The great number of valuable publications, and more especially the recent literature of subjects pertaining to hygiene, are not available for study or reference because unbound. The necessity for an appropriation for binding needs no other demonstration. These facts are to be taken into consideration in connection with the circumstance that there has not been a day without some call for information

either from plumbers, architects, medical men, or others interested in the means of preventing dangers to health.

The necessity for a building for the objects of the museum is apparent to any observer, and it is respectfully urged that the attention of Congress be called to this condition of affairs. Other countries have established institutions of like character, and the progress of sanitation in the United States, as presented in this museum, is creditable alike to the originality of the presented inventions and the object sought to be obtained. Over thirty cases of models representing the baths at Bath, England, which formed a prominent exhibit at the late International Sanitary Exhibition, are now stored in the cellar. These models have been presented to the museum.

The apparatus of Galton for anthropometry is stored, and cannot be used for want of room. The attic is also crowded with unbroken packages. It is the opinion of those well informed upon such matters, after an examination of the present display, that it is overcrowded, and that twice the present area is necessary for proper presentation of the appliances, models, etc. There is need for a permanent clerk for the museum. The clerical duties in cataloguing, indexing, labeling, etc., utilizes most of the time of the medical officers attached to the museum, and there is but little time left for the pursuit of scientific study.

The changing of medical officers causes irregularity, and both system and method are subjected to too great variations by such changes. The officer leaving does not, nor cannot, leave his acquired knowledge to his successor, and a new arrival has of necessity the accumulated "dead work" to embarrass and obstruct his usefulness, and he, too, just as becoming efficient, is detached and ordered to his more legitimate duty at sea, and so on again and again. The advantages

of the museum to original investigators and their investigations into matters connected with public health and the progress of preventive medicine are at present at their minimum for want of working room. It is respectfully suggested that the number of officers on duty at the museum be increased, preference being given to those officers who have displayed interest in and are ready to work upon matters so important to the state as public health. The tools are here, but the workmen are not now on hand.

In the physical department attempts have been made to define a standard by which to measure the relative viscosity of oils for lubricating purposes at determined temperatures, and also in colormetry as giving data for accurate measurements by instruments of precision.

The biological department has not been laid under service, but it is proposed to enter upon examinations in this direction, especially into the products made by the bacilli—the ptomaines and leucomaines. It is considered by the writer that these substances all belong to the ammonium series and are the exponents of the inverse metabolism of the amines, all tending to the ultimate isolation of nitrogen from animal organic compounds. It is also considered that the alkaloids existing in the vegetable kingdom may be found to be the result of cell action in such vegetable structures, closely allied to the action of the bacilli in animal matters. Should these projections become demonstrated facts their value, both in curative as well as in preventive medicine, can readily be made plain. The toxic phenomena produced by these substances, both from the vegetable and animal kingdoms, appear to be alike when introduced into the system, and the same phenomena occur and appear in cases of uræmic intoxication from the retention of urea—a typical example of this class of bodies

—as well as in typhus-fever where the glass rod moistened by HC_1 and held in the expired air gives the reaction of the gaseous amines. It may be that the odors that characterize some diseases have a like origin.*

The comparison of the poisonous effects of the vegetable alkaloids with the results of toxic effects of the various ptomaines and leucomaines, when introduced into the system, exhibit the fact that they are generically alike—nerve sedatives—narcosis marking one species, cardiac depression another, the functions of the spinal cord being affected in a third, and so on. The alkaline condition of the discharges in cholera, and their innocuousness when rendered acid, the acid treatment in typhoid-fever and the use of disinfectants in destroying the germ and its products, are all connected with this subject. The production of these alkaloidal bodies in the living body in health, as well as in disease, is now well determined.† Their elimination in normal physiological conditions; their retention as perverting these conditions; their causative agency in the production of disease in the body in which they are formed and in the bodies of others subjected to their action, are now the subjects of extended and careful research. The influence the results of such studies must have on the future of both sanitation and therapeutic medicine for good cannot be now calculated. The further metamorphosis of these amine com-

* As this class of bodies is likely to be increased by future research, the name for the whole genera, it is hazarded, should be micro-bamines, as expressing alike origin and composition.

† It may here be mentioned that the presence of these substances in animal products, used as foods, presents a further field of investigation to the biological chemist. The discovery of a poisonous alkaloidal body in cheese and in milk, after being kept for some time, by Professor V. C. Vaughan, are but the initiative steps in this research. There will occur other instances to the sanitarian, having perhaps a like solution, as causing disease-movement and suggesting preventive measures.

pounds, manufactured by the microbes, by the action of the oxygen in the air, resulting, when in the presence of alkalies, in the production of the nitrates and nitrites of the bases and water, has received an industrial application in the manufacture of potassium nitrate for technical uses, more especially in the preparation of gunpowder. Whether it would be remunerative enough to so utilize sewage by this process of nitrification is yet to be determined. The like utilization of the refuse from abattoirs, furnishing the animal nitrogenous matter with potassium carbonate, is suggested for experimentation by the chemist as being a source of supply of potassium nitrate in time of war, should other sources fail in such emergency. The microbe can be furnished by the biologist, and the "environment" necessary, such as temperature, moisture, air, and other attendant phenomena, can readily be determined by experimental investigation with scientific accuracy. In one special direction in naval hygiene is attention called to these bodies. These alkaloids all appear as the results of retrogressive metamorphosis; as the production of organized matter, which in a broadly comprehensive way we call here bacteria, and in solutions undergoing the so-called putrefactive changes. Bilge water is a putrefactive solution. A spirochæte has been found in it, and in former publications of the writer bilge water was suspected, on grounds which are now evident, to be a source of febrile movement on ship-board. Cleanliness of the bilges must be insisted upon hereafter.

It is also proposed to investigate the slow chemistry of concentrated and preserved foods in order to determine the time when their nutritive value begins to decidedly decrease and when it ceases.

CREMATION.

From the increasing literature upon this subject is inferred a growing interest in the community upon this mode of the disposal of the dead. This object, of so much sanitary importance, might soon be obtained were it not hampered by so much of the emotional element that appears inseparable from its consideration, as well as certain medico-legal restrictions which can be readily removed. It must be evident to the enlightened sense of the community that such mode of burial is demanded in such diseases as small-pox, scarlet-fever, diphtheria, and the like. There are but few models of apparatus for cremation on exhibit in the museum. There has been invented a portable crematory for use in rural districts, as well as in time of war.

MINING.

The successful adaptation of the electric light for mines and mining operations is now assured. Some experiments are on record in which it is attempted to discover how far the influence of tinted glass coverings to this light may be used in determining the presence of fire-damp, light carburetted hydrogen, the methane of the modern chemist. If these experiments are successful there will be an advance in the better hygiene of mines. The miner's old oil lamp, rendering the air impure by its products of combustion and its vile-smelling acroleine odors; the Davy lamp, with its dim, lurid light, and the carelessness with which it is handled, will be things of the past, and thus the dangers to health, as well as to life and limb, in mines be removed.

SCHOOL HYGIENE.

Without entering upon an extended notice of this section of sanitary science, leaving out for the present the considera-

tion of the school-house, a note here appears necessary concerning the hygiene of the eyes of school children. Some German sanitary observers in this direction have condemned the dark slates now in use on physiological grounds, and on the same grounds have suggested the use of white slates with dark pencils. Taking these premises, with the results of some personal experience and observation in determining ranges of vision, as well as of the color-sense, the writer is led to suggest that a uniform "face" of type, as **antique**, be adopted for school books, and that the traditional black printing ink be abandoned for inks of neutral tints in printing such books.

This accepts a proviso that the paper remains as now—white and unglazed. How far sharpness of definition of letters can be secured by such color use the printer can determine. Further observations may support the correctness of these suggestions; that there is a strain upon the nervous apparatus of vision in the reading of books as printed at present (black on white) is an accepted fact; that this strain is a cause of asthenopia is also well made out, and that the apparatus of accommodation in the eye is affected follows as a consequence. This strain, expressed in ordinary language as "tired eyes," is relieved by letters printed on tinted paper and by colored printing inks on white or colored paper; and thus a circus poster, from these facts, oftentimes contains more refreshing reading, in a hygienic as well as a mental sense, than some newspapers or books. It needs but the simple statement, in this consideration, that glaring colors are always to be avoided.

THE SIPHONAGE OF TRAPS.

The experiments, with the apparatus necessary for the purpose, upon the siphonage of traps which have been carried on at the Museum by Glenn Brown, A.A.I.A., have

now been completed. The results of this investigation are forwarded with this report. It is an addition to the literature of this matter, and is to be placed alongside of the notes of Folsom, E. W. Bowditch, Waring, Philbrick, and others.

PREVENTION OF MALARIA.

To the list of plants proposed for use to modify or arrest the production of malaria, as in the eucalyptus and helianthus, there must now be added a water plant, the *anacharis alinastrum*—the choke-pond weed natural order, hydrocharidaceæ. Its rapid growth and spread in marshes and rivers where it has been planted, and the cessation and disappearance of malarial and diarrhoeal diseases formerly affecting villages and towns about such localities, have been grouped into a relationship. It is now suggested to cultivate this aquatic plant in marshy districts with a view to prevent the production of malaria. Further experiment is necessary to determine the value of this plant in this direction, but there seems to be enough evidence of such value to warrant this note.

More especially interested in naval hygiene, it is with some gratification that attention is called to its progress as exhibited in the museum and library.

AIR AND VENTILATION.

The model of the fish commission steamer Albatross, with the mode of ventilating that vessel, designed by Passed Assistant Engineer George W. Baird, U. S. N., is worthy the attention of the naval constructor. The improvements in ventilating shafts, with cowls for the ventilation of the berth decks of passenger vessels, show that the necessity for fresh air has at last become apparent to large steamship companies.

WATER.

The storage of water in iron tanks seems to leave nothing more to be desired in that direction, but the constant rusting and the chalybeate taste of the water has been considered objectionable. Filtration does not remove this taste. Some years ago it was recommended that the interior of the tanks should be prepared by the Barff process to prevent rust. It may not be out of place here to suggest that this process might be usefully applied to chains, anchors, and shot.

The aëration of water has been the cause of many patent appliances. Baird's aëerator answers all purposes, and as it is attached to the distiller, the distillation, cooling, and aëration of water are completed by one process. The like is the result of the Normandy apparatus. The results of the observations of our medical officers upon water supply, as published in the reports of the surgeon-general of the navy, lead to the knowledge that there are few ports visited by our vessels of war at which the supply of potable water can be accepted for use on board ship with the confidence that no harm may result. Distilled water should be used at all times. On blockading duty no other water can be had save from an occasional rainfall, and it is no new thing to a naval sanitarian to state that such water is impure. It is again recommended that the interior of water-tanks be treated by the process mentioned to protect from rust. Of the hygienic use of distilled water it is to be noted that the absolute immunity of the squadron on the Asiatic station, in the years 1877-79, during the prevalence of epidemic cholera, and the decrease of all diseases of the bowels attended with flux, is ascribed to the use of distilled water on board of the vessels on that station.

The pollution of the sources of water for the supply of cities by sewage, garbage, etc., is constantly being referred to by sanitarians as a steady and increasing danger to health. To remove these dangers will demand more attention in the near future than is now given them. The destruction of garbage should be by fire, and in the cities a public crematory for such purposes is now a necessity. In the utilization of sewage there appears to be at present no profitable mode for such purpose. As a fertilizer its use appears to be best subserved by the process of intermittent, downward filtration in soils adapted to such usage. It may be that, failing to secure a degree of freedom from contamination that renders water "potable," the distillation and aëration of such non-usable waters by some mechanical device adapted to the culinary apparatus will be part of the future house sanitation. As to the disposal of fecal matter, we should profit by the observations and experiences of Oriental nations, and return it to the soil in such manner as to avoid contaminating water supplies.

FOOD.

The attached table from the bureau of provisions and clothing presents the United States naval ration as allowed by law, and the practical substitutes permitted. Without entering upon the detail of the value of each article as to its tissue-forming or heat-making value, it is believed to be an excellent ration. It is suggested that an extract of meat be added, to be used in connection with other animal foods after prolonged and exhaustive exertions of no matter what kind, as well as a part of the ration when salt meats are used. It is known that the addition of a meat-extract promotes the digestibility of salt food. In addition, the use of

lactic acid is recommended as part of the ration. It is a natural constituent of the meat juices; is, perhaps, destroyed by cooking and diminished by salt-packing; is preferable to vinegar; has about the same commercial value, and it is proposed in this manner to restore it to the food. A re-arrangement of the meal hours on board ship is suggested. The extremes to be avoided are, first, an excess of food in a given time, as meals too frequently repeated in such time, and, second, the interval between the meals be not too long. The total amount of food taken in the twenty-four hours should be distributed in accordance with physiological laws.

In the direction of the preservation as well as conservation of articles or products used as foods there does not appear to have been any unusual activity. In general terms it may be stated that the tendency in this direction has been directed by the studies on antiseptics, and the most prominent of these articles, boric and salicylic acids, with other known articles, enter into the composition of the preservative means suggested. They are of very questionable utility in the preparation of foods for diets, no matter how valuable their antiseptic properties.

* * * * *

LIGHTING.

The use of the electric light on shipboard has proved of service. The vitiation of the air from the combustion of oil and candles is ended. Recurring to the oft-repeated fact of the etiolation of plants from the absence of light and the blanched appearance of miners and others whose avocations are in "darkness," will be of value to the observant medical officer to notice what effect the present system of lighting

has upon the hæmotosis which furnishes the "ruddy cheek of health."

TRANSPORTATION OF THE SICK AND WOUNDED ON SHIP-BOARD.

The cot for transporting sick or wounded, designed by Medical Director A. L. Gihon, U. S. N., has so long been known and is so efficient that it requires no comment. The ambulance cot of Medical Director A. C. Gorgas, U. S. N., is also well known, as well as that of Medical Inspector H. M. Wells, U. S. N. A knit hammock, for a like purpose, is on exhibit in the Museum, designed by Thomas Graham, pensioner, U. S. N.

COOKING.

A model of the improved ship's galley, designed by William Young and in use in the service, is also on exhibit. It seems that a man-of-war's galley can only be understood by a man-of-war's man, for in all the contrivances adapted to utilize cooking space, galleys invented by sailor-men economize the space assigned to its limit. This galley, as far is known, has few defects.

DISINFECTION AND DISINFECTANTS.

Models of stoves for the purpose of disinfecting bedding, etc., at high temperatures are on exhibit in the Museum. There does not appear to have been much progress since the issue of Sternberg's essay on disinfection, by the American Public Health Association, in the scientific determination of the value of disinfectants. The journals on file contain notices of the application of numerous derivatives from the wood and coal tar products, asserted to be efficacious both as disinfectants and deodorizers. Judgment as to their real value must be suspended until further experimental research shall have placed them where they properly belong. The

steam-atomizer invented some years ago by Medical Inspector H. M. Wells, U. S. N., and originally adapted for the use of carbolic acid solutions in the disinfection of vessels, is now made of materials not acted upon chemically, and could be utilized for the mercuric bichloride solutions now used for such purposes.

In the U. S. S. Dolphin 68 cubic feet per man is the berthing-space on the berth-deck. It is too small from physiological considerations; is below that given to an emigrant in the short passage across the ocean (72 cubic feet). The known ill effects of re-breathed air; of the depressed vital conditions induced by impure air from overcrowding, added to constantly wet decks; the diminution of the resisting power to disease movement; the epinose condition—in fact all these enter in the future into the etiology of disease on shipboard. This small cubic space has now become a potential factor in determining "origin in line of duty." Late published papers upon the future naval organization are marked with the idea of making the modern vessel of war do duty both as a fighting ship and as a transport, and by such means not to diminish the crew. Whatever is done in the direction of the double duty of fighting vessel and transport, it should be remembered, is done at the expense of health, and in just that diminution is the efficiency impaired. The solution of the question will come in time.

In all these considerations the fact must not be lost sight of that "the trade is War."

LIFE-SAVING APPARATUS.

There are numerous appliances for such purposes—rafts, jackets, and mattresses—and all could be utilized in case of necessity. The Museum has many such contrivances, all of which present some advantages.

HAMMOCKS.

There appears to have been no change in the hammock. It is to be hoped that some inventive genius may construct one that will do away with the bad position that the body has to assume while sleeping in one. More especially should such a hammock be used in the training-vessels, where the growing apprentices may be at least freed from any tendency to spinal deformities which the position during sleep in a hammock inevitably tends to produce. It is suggested in this connection that the crew be divided into three watches, for the purpose of securing the proper amount of sleep and rest. The suggestion is not new, and the present appears to be a favorable time to advance in this right direction; all experience goes for nothing if it is to be only accumulated and not used.

FIREMEN AND COAL-HEAVERS.

Following closely upon the division of the crew into three watches for rest and sleep comes the consideration of the hygiene of the engineer's division. The new fire-rooms are to be under an increased air-pressure when the vessel is under steam. This factor of increased air-pressure is to be added to the effects of high temperature, and the results of this sum upon the health is looked for with interest. Forecasting from the known results of each factor separately upon the health of workmen, it is conjectured that, plus the exhaustion induced by the heat, there will be in some degree phenomena that occur in the "caisson" disease, and that the brunt of these influences will be evidenced by some impairment of the functions of the spinal cord. This exposure must of necessity occur, and to limit such it is suggested to divide this department into four watches, when upon duty, as affording the necessary time for a re-approach to a recovery of a normal condition.

THE MEDICAL OFFICER ON SHIPBOARD.

It does not need any demonstration that with the increase of the efficiency of men-of-war as fighting machines, or the tactical management of troops on shore, the duties of the medical officer have vastly increased, and are out of proportion to his present position. In addition to his duties in the care of the sick and wounded, the prevention of the causes of disease in the men and the means for the preservation of their health demands an amount of practical knowledge and vigilance that belongs alone to his profession. With the political aspects of war he has nothing to do, as such; all his efforts are to conserve the health of the men, so that their strength and endurance, when the moment for fighting has come, are at their maximum and kept so. The action over, his duties are obvious, and need not be narrated. To those who have had the experience description is out of place, and to those who have not, no description can adequately detail that duty. And even in the groaning wards of his perhaps improvised hospital, his sanitary vigilance and knowledge is not to be hampered, for he recognizes, in even this assemblage of sick and wounded, enemies to the health of those around. From my own experience I have stated that the medical officer of a vessel of war should be, by law, her sanitary officer, and recent events in the ocean steamship service lead me to believe that in this respect the mercantile marine will be far in advance of the naval service. What rewards, what definite position the naval surgeon is to have in the future naval hierarchy, is at present conjectural, and will remain so until settled in some manner alike creditable to all concerned, which will only be when calm, impersonal and unselfish logical deductions are received and accepted.

HYGIENIC AND SANITARY EMERGENCIES.

Mention is made of these subjects simply to recall to the medical officer that he may be called upon to improvise means of transportation, for the shelter of sick and wounded, for hospital purposes, etc. In these matters

"The readiness is all."

The length of time that I have been upon the present duty does not permit me to give in further detail the recent progress in sanitation. Other duties, however, have not prevented the writer from noting the currents in the direction favorable to public health. A cursory survey of the stream may not prove unacceptable.

The reports of the various State Boards of Health mark the increasing interest and vigilance of physicians as guardians of public health. In each report the sanitary wants of the State obtrudes itself at once. The prominent industries in each locality finds some sanitarian making his observations for the commonweal upon its hygiene; here another keeps track of the hygiene of schools; another watches over the sanitation of the charities; there is in our country hardly an industry or charity, hospital or asylum, reformatory or prison, market or farm, house or village, or city that has not some earnest worker in preventive medicine. Not only is the physician engaged; the artisan at work upon "the preservation and conservation of foods" calls in scientific knowledge to his aid. Adulterations, as affecting public health have already secured national legislation; even the use of stimulants and narcotics has given rise to a political element in public affairs in so far as they affect the general health. Railroad traveling, on some of the prominent roads, has its ambulance system, and the traveler by sea is being cared for as regards his health and safety. The architect and engineer design and construct

the works whose necessity the sanitarian has demonstrated, for drainage, the removal of excreta, the sewage, and for water-supply. The disposal of sewage and excreta is becoming daily of more concern to the agriculturist, engineer and sanitarian.

The experiments upon the deportment of soils toward human excreta in various stages of change that have been inaugurated in Japan are of extreme interest to the farmer and sanitarian, as exhibiting the disinfecting power of various soils—that is to say, in the destruction of minute organisms by the agency of earth, and also to the engineer as to the means of transportation to localities the excreta where such fertilizer is needed. The results of these investigations, as far as can be ascertained, are akin to those found by Professor R. Pumpelly for the National Board of Health, and which are to be found in the report of that body for the year 1861.

In industrial hygiene the effects of the inhalation of the dust from the manufacture of slates and slate pencils for schools has called for well-known devices to get rid of the dust in the breathing air. The lung affections caused by the inhalation of this dust need not be erected into a new disease, to be called slatemaker's asthma, bronchitis, or phthisis, for the phenomena are the same as those produced by the mechanical irritation of any finely divided particles of matter so inhaled.

The carriage of disease-germs by ships' crews and cargoes, and the prevention of the introduction of contagious and infectious diseases by all the means and applications which should be grouped in the modern and scientific use of the term "maritime sanitation," have not escaped observation.

The pending national legislation to regulate inter-state commerce has a sanitary aspect that may in future prove of

importance when there comes to the country the much desired national laws regulating "quarantine." Elsewhere I have cited the opinions of such jurists as Justices Marshall, Story and Grier, that "quarantine laws, health laws, etc., are regulations of commerce." How far the proposed inter-state commerce bill may make a classification of *goods* coming from infected places, or as to the *modes of conveyance*—i.e., railroad cars, canal boats, steamboats, etc., becoming carriers of disease-germs of themselves—or of infected goods, or in what manner this proposed *inter* (between and among) state laws may come in contact with *intra*- (within) state regulations of commerce, quarantine law, or health ordinances is unknown. As to *persons*, however, they are not the objects of commerce, and do not fall within the reasoning founded upon the construction of the power given by Congress, by the Constitution, to regulate commerce (*City of New York v. Miln*, 11 Peters, 102). What commercial regulations are to apply to a person suffering from a contagious or infectious disease in transit anywhere in the United States, among the States, cannot now be definitely formulated; within a State, that State's quarantine, health, and police laws now govern.

My own views upon this subject are of record, and the principles advanced have not changed even in the light of the recent International Conferences, but have been more decidedly fixed.

In the adaptation of the principles is the labor and toil.

MATTERS OF INTEREST.

AMERICAN MEDICAL ASSOCIATION.—*Organized in 1846.*

The next annual meeting will be held June 7th, 8th, 9th and 10th, 1887, in Chicago, Ill. Following are the officers:

President, E. H. Gregory, M.D., St. Louis, Mo.

Permanent Secretary, W. B. Atkinson, M.D., Philadelphia, Penn.

Assistant Secretary, J. Nevins Hyde, M.D., Chicago, Ill.

Treasurer, Richard J. Dunglison, M.D., Philadelphia, Penn.

Librarian, C. H. A. Kleinschmidt, M.D., Washington, D. C.

Chairman of Committee of Arrangements, Charles Gilman Smith, M.D., Chicago, Ill.

NINTH INTERNATIONAL MEDICAL CONGRESS — TRANS-ATLANTIC RATES.

The Chairman of the Committee of Arrangements at Washington reports that reliable arrangements have been made by which members wishing to attend the International Medical Congress in Washington, September 5, 1887, can be accommodated by the following steamship lines at the liberally reduced rates mentioned, viz.:

Red Star Line — \$100, Antwerp to New York and return.

Inman Line—\$100, Liverpool to New York and return.
Hamburg Line—\$90, Hamburg to New York and return.
Royal Netherland —\$80, Amsterdam to New York and return.

And that the several lines named have consented to extend the same rates to the families of members, as the following letter shows:

WASHINGTON, D. C., FEB. 14, 1887.

A. Y. P. GARNETT, M.D., *Chairman of the Committee of Arrangements of the International Medical Congress:*

Dear Doctor:—I am happy to inform you that, through the instrumentality of Mr. Edward F. Droop, agent in this city for the Lines, who has manifested so much interest in this matter, we have been able to secure from the Hamburg-American, the Red Star and the Inman Lines the offer of the same reductions for the families of members of the Congress as those I have already reported for the members themselves.

Very truly yours,

J. W. H. LOVEJOY,
Chairman Committee on Transportation.

In order to aid the work of the Committee on Transportation, the State Department at Washington has instructed the resident U. S. Consuls at European ports from which the steamships leave to actively aid in ascertaining the number of those wishing to avail themselves of the reduced rates offered. This is more fully explained by the two following letters:

FEB. 14, 1887.

Editor of the Journal of the American Medical Association:

Dear Sir:—The following additional information relative to transatlantic transportation is furnished for publication :

The White Star Line as well as the Cunard Line, having declined to make any reduction in fare, you will please strike out *Havre* from the list of European ports last published.*

I enclose also, for publication, a copy of instructions which the State

Department has kindly sent the resident U. S. Consuls at the ports of Liverpool, Hamburg, Bremen and Antwerp.

Very respectfully,

A. Y. P. GARNETT, M.D.,

Chairman Committee of Arrangements for the International Medical Congress.

DEPARTMENT OF STATE, WASHINGTON, FEB. 5, 1887.

Sir:—The Committee of Arrangements of the International Medical Congress, which meets in Washington in September next, desire to ascertain as nearly as possible the number of delegates who will attend the same, with a view of making favorable terms for their transportation. For this purpose you are therefore instructed to bring the matters to the attention of those interested by such means as you deem best, requesting that you may be furnished with the names of such delegates as will attend, and the number of ladies who will accompany them. The result of your efforts should be promptly reported. I am, sir, your obedient servant,

J. D. PORTER,

Assistant Secretary.

BOOK REVIEWS.

THE SCIENCE AND ART OF OBSTETRICS. *By* THEOPHILUS PARVIN, M.D., LL.D., *Professor of Obstetrics and Diseases of Women and Children in Jefferson Medical College, Philadelphia, etc., pp. xv. and 701. Philadelphia :* LEA BROTHERS & COMPANY. *Chicago:* A. C. MCCLURG & COMPANY. 1886.

The author says in his preface that "he has endeavored to write a book which will be useful alike to students and to practitioners." He has been actively engaged as a teacher nearly twenty years, and may consequently be presumed to have included, within the limits which he has chosen, whatever he considers of essential value in relation to his subject. In its present edition, the book will hardly become a classic. As a practical guide for daily use by the under-graduates or by practitioners, it is excellent and reliable ; but as a book of reference, it will be found disappointing. All topics usually discussed in such books are very intelligently and practically treated in this one, and if disappointment arises in consulting it, it is because the treatment of the subject in hand is not quite full and complete. The book is fairly open to the charge that American authorities and experience are too exclusively drawn upon and cited.

The author's style is that of a teacher, rather than that of an author, and his book is much more practical than scientific. There are two hundred and fourteen wood-cuts and

one colored plate, and these illustrations are fairly well chosen. The index, so far as tested, is satisfactory, and as already stated, the book will be found an excellent practical guide in the practice of obstetrics. E. W.

HANDBOOK OF PRACTICAL MEDICINE. By DR. HERMANN EICHHORST, *Professor of Special Pathology and Therapeutics and Director of the University Medical Clinic in Zurich. Volume I. Diseases of the Circulatory and Respiratory Apparatus. One hundred and three wood engravings; pp. v, 401. New York: WILLIAM WOOD & COMPANY. Chicago: W. T. KEENER.*

This work of four volumes, which constitutes a portion of Wood's Library for 1886, is a translation under another name of Eichhorst's *Speciellen Pathologie und Therapie*, 1885, although no mention of this fact or of the name of the translator is found on the title page.

It is a most acceptable addition to our literature in English from the German school of medicine. Volume I, to which this notice especially refers, includes the diseases of the circulatory and respiratory apparatus.

The section devoted to cardiac affections is particularly creditable. Even valvular lesions of the right side of the heart, which are ordinarily but superficially considered, receive extended notice. True, pulmonary insufficiency and stenosis are rare, and although relative insufficiency of the tricuspid valve is more frequent, particularly in the course of mitral or aortic disease and in pulmonary affections, isolated tricuspid lesions are also rare. "Among two hundred and thirty cases of valvular lesion, von Bamberger found the tricuspid affected [primarily] only in two." Nevertheless,

cases of doubtful character are continually arising, in which it is necessary either to establish or positively to exclude these right-sided valvular defects, and for this purpose a knowledge of their murmurs and paths of conduction is essential.

To diseases of the nasal cavity are apportioned but five pages, and diseases of the larynx fare only a trifle better. The subjects should rather have been omitted entirely, as the purpose of conforming the contents of a book absolutely to its title is hardly sufficient cause for the insertion of chapters scarcely approaching mediocrity into an otherwise laudable work.

Diseases of the lungs are comprehensively treated. Pulmonary tuberculosis, however, is here omitted, evidently being embraced elsewhere in the work under the general subject of tuberculosis.

Regarding the etiology of acute fibrinous or croupous pneumonia, the positive opinion is advanced that "it is an infectious disease, whether it develops primarily or secondarily, and that catching cold possesses a causal significance, only in so far as it favors the occurrence of infection." It is further opined that the disease may be produced, not alone by a single kind of microbe, but by various forms of bacilli. From this standpoint is explained the occurrence of secondary pneumonia during the course of other infectious diseases, *e. g.*, the "schizomycetes" of typhoid fever, gaining access to the alveolar spaces of the lungs, may there occasion a fibrinous pneumonia. Much reason is advanced in support of this argument, and yet it were difficult to conceive, in accordance therewith, why a robust steamship captain, having been exposed on the steamer-bridge in mid-ocean to a

severe gale for forty-eight hours, should suddenly be taken ill and die of pneumonia.

Whilst recognizing the infectious character of the disease in general, in explanation of all cases, it seems to us necessary to assume either that cold may at times serve as the sole etiological factor or that there are two diseases anatomically apparently identical, one an infectious systemic disease with a local manifestation, and the other a simple local inflammatory affection, accompanied by systemic symptoms.

The author recognizes, in a pathological sense, the frequent transition of acute fibrinous pneumonia into chronic interstitial pneumonia or fibroid phthisis, and suggests that chronic bronchitis, broncho-pneumonia, and acute pleuritis, on account of intimate lymphatic communication with the interlobular connective tissue, may also serve as primary causes of fibroid phthisis. This view conforms to practical clinical experience, and the attempt to draw undeviating lines of demarcation between these various affections should therefore cease.

The illustration of the oldest form of pneumatic cabinet, that of Tabarie, is of interest in connection with the recent introduction in this country of more nearly perfect forms of this apparatus.

W. E. CASSELBERRY.

THE SURGICAL DISEASES OF CHILDREN. *By* EDMUND OWEN, M.D., F.R.C.S. LEA BROTHERS & COMPANY, Philadelphia, 1886. Octavo. Chicago: A. C. McCLURG & COMPANY.

This little book forms one of a series of "Clinical Manuals for Practitioners and Students of Medicine." Each

chapter is concise, pointed and admirably written. In mooted cases the author has chosen that theory of cause which furnishes the "best working basis" for successful treatment. Thus, he considers croup, diphtheria and membranous laryngitis practically identical, and early tracheotomy is strongly advocated.

Tubage is noticed briefly. With this operation Dr. Owen has evidently had no experience, but he pronounces it "an untrustworthy substitute for tracheotomy," and discounts its use in children.

On acute intestinal obstruction he says, "Abdominal section is the only method of active treatment on which reliance can be placed, and its performance is demanded where the diagnosis has been made." And further, "Little trust should be placed in treatment by distention."

The illustrations comprise four chromo-lithographs and eighty-five engravings.

M. E. B.

SURGICAL DISEASES OF THE KIDNEY. By HENRY MORRIS, M.A., M.B., F.R.C.S., *Surgeon to and Lecturer on Surgery at the Middlesex Hospital, London.* 12mo. Pp. 555, with 6 chromo-lithographic plates and 40 engravings. Philadelphia: LEA BROTHERS & COMPANY, 1886. Chicago: A. C. McCLURG & COMPANY.

There is no date upon either the title page or preface to show when this book was written. It is evident from the body of the work, however, that it was printed in 1886.

The coloring of the chromo-lithographic plates is much too high to be true to the appearances upon the surgical table or in the post-mortem room, but in this respect they are less at

fault than such plates usually are. They have been carefully prepared, and they add much to the value of the volume.

Regarding the merits of the book, aside from the illustrations, it may be said that the author shows that he is fully at home in his treatment of the subject. The references to the literature involved are very abundant. The most striking defect in the book is the failure to sufficiently insist upon the importance of antiseptic details in the operations described. To this objection it is not enough to reply that the book is not written for beginners, for any book which does not insist upon the importance of careful and complete antiseptic measures in surgical operations will be condemned by many for the omission.

E. W.

A LABORATORY GUIDE IN URINALYSIS AND TOXICOLOGY. *By* R. A. WITTHAUS, A.M., M.D. *Pp.* 73. *New York:* WILLIAM WOOD & COMPANY. 1886.

Professor Witthaus gives us here a very useful little manual for laboratory work.

The descriptions of methods and tests are accurate and concise, as one would naturally expect from an author who has already made himself known by numerous contributions to medical chemistry.

The work is full enough to satisfy the wants of the general medical student.

A blank page is left opposite each printed page for notes.

A COMPEND OF PHARMACY. *By* F. E. STEWART, M.D., Ph.G. *Pp.* 196. *Philadelphia:* P. BLAKISTON, SON & COMPANY. 1886.

This little book is No. 11 of the "Quiz-Compend" series. It is based on the well-known "Text Book of Pharmacy," by

Joseph P. Remington, and answers fully the purpose for which it is intended.

The author expressly states that it is not to be used as a text-book, but as an aid in the study of a larger work.

Employed in this way it will doubtless render assistance to the student of pharmacy.

HOUSE-PLANTS AS SANITARY AGENTS; OR, THE RELATION OF GROWING VEGETATION TO HEALTH AND DISEASE. By J. M. ANDERS, M.D., Ph.D. *Pp.* 334. *Philadelphia*: J. P. LIPPINCOTT COMPANY. 1886.

This interesting work contains a great deal of information on an important subject. The author has published several papers during the last few years on the chemical activity of growing plants, and the results given in these with much new matter, and abstracts of the work of others, is here presented in book form. The value of house-plants as agents in the purification of air has been discussed pro and con; the numerous observations of Dr. Anders seem to show conclusively that the good they accomplish is generally underestimated.

BOOKS RECEIVED.

How we Treat Wounds To-day. By Robert T. Morris, M.D. New York: G. P. Putnam's Sons. Chicago: A. C. McClurg & Company.

A Treatise on the Principles and Practice of Medicine. By Austin Flint, M.D., LL.D. Philadelphia: Lea Brothers & Company. Chicago: A. C. McClurg & Company.

Massage as a Mode of Treatment. By William Murrell, M.D., F.R.C.P. Philadelphia: P. Blakiston, Son & Company. Chicago: W. T. Keener.

Transactions of the American Surgical Association. Vol. IV. Edited by J. Ewing Mears, M.D. Philadelphia: P. Blakiston, Son & Company. Chicago: W. T. Keener.

The Curability of Insanity. By Pliny Earle, A.M., M.D. Philadelphia: J. B. Lippincott & Company. Chicago: A. C. McClurg & Company.

The Functions of the Brain. By David Ferrier, M.D., LL.D. New York: G. Putnam's Sons. Chicago: A. C. McClurg & Company.

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